

RESEARCH GRADUATES eYEARBOOK 2020



Graduate Research and Development
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Editors: Graduate Research Education & Development (GRE+D)

Introduction

QUT Business School

Masters graduates

PhD graduates

Creative Industries Faculty

Masters graduates

Professional Doctorate graduates

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Professor Christopher Barner-Kowollik
Deputy Vice-Chancellor and Vice-President (Research)

As a challenging year draws to a close, our eYearbook 2020 is a testament to the resilience of our higher degree research (HDR) students in a complex and ever-changing world.

QUT's HDR students excel in understanding the social and natural fabric of our world and how to translate their deep learnings into providing solutions for some of the most pressing problems we face locally as well as around the globe. Our graduates demonstrate that building a culture of collaboration across national borders remains one of the most important facets of scientific discovery, as scientists from different disciplines come together to transcend classical subject boundaries and explore new and advanced concepts.

Our higher degree students understand that the key to a prosperous and peaceful global community lies in mutual respect for other cultures and the insights that can be obtained by carefully considering unusual approaches and uncharted waters. They understand, critically, that we are at a point in history where no individual, institution or indeed nation can solve the challenges that we are faced with today by themselves.

I commend our HDR students and their advisors for their outstanding achievements. You are proud ambassadors of QUT and Australian science.

Enjoy our 2020 HDR Graduate eYearbook.

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Professor Helen Klæbe
Pro Vice-Chancellor (Graduate Research and Development)

As we approach the end of a tumultuous year and continue to feel the effects of the COVID-19 pandemic across the world, it has never been more important for QUT to produce graduates who can deliver innovative solutions to complex real-world problems. Despite facing many challenges this year, our graduate researchers continued to produce high quality and impactful research and work collaboratively with our industry, government and societal partners to shape and improve our local, national and global communities.

Our academic research programs are complemented by highly regarded transferable skills training offerings and opportunities for research students to develop leadership, entrepreneurship, critical thinking and communication skills as well as relevant industry experience. This unique skill set ensures that QUT graduates are well positioned to pursue successful and diverse careers in industry, academia or a mixture of both.

We thank our supervisors, including our industry and clinical adjunct supervisors, for their expertise and commitment to ensuring our students' success. We also acknowledge our research collaborators, funding bodies and end users for their continued engagement and support. These valuable partnerships enable our research students to build strong networks and career opportunities and (hopefully) remain connected to QUT long after graduation.

QUT is proud of our 2020 research graduates' achievements and we invite you to explore and celebrate their research in this eYearbook.

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Associate Professor Amanda Gudmundsson
Executive Dean, QUT Business School

Researchers in the QUT Business School focus on developing actionable solutions to the real world problems faced by research end users; individuals, corporations, not-for profits, governments and NGOs, amongst others. Working extensively with, and through, international collaborators our research has global impact on policy and practice as well as through advancements in our academic disciplines.

In 2020, the COVID-19 pandemic significantly challenged our researchers, severely interrupting their research process, especially when collaborating with external partners internationally. Our researchers have demonstrated significant resilience and flexibility, completing their research commitments and graduating from the QUT Business School with topics across all of our business disciplines as well as at the intersection of fields.

This work represents new knowledge for businesses, policy makers and consumers who are facing an increasingly dynamic environment in which 'keeping ahead of the game' is a real challenge. QUT's eYearbook showcases in more detail their cutting-edge research and achievements and I hope you enjoy reviewing their work.

I would like to congratulate all of our HDR graduates. I wish you well for your future endeavours and invite you to keep in touch with QUT through QMomentum, a program and platform that supports research graduates to transition from study to work.

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Professor Mandy Thomas
Executive Dean, Creative Industries Faculty

Reports about the needs of the future workforce indicate there is little doubt that Australia's young people will need skills in technology, science and robotics. Many education and business commentators note the real skills needed are what is broadly called the four C's – creativity, communication, critical reflection and collaboration. Reports say that these skills are less able to be replaced by technology and are transportable across industries and roles. Rather than focusing on deep technical skills, employers are instead looking for capacities such as collaboration, problem-solving, critical thinking, imagination, communication, resilience, agility and empathy.

QUT Creative Industries higher degree research graduates are ideally placed to be the innovators and activators in the coming decades as they have the four C's in abundance. Their leading research across the creative and cultural industries in fields such as trust and disruption through digital media, design for better communities and life outcomes as well as social cohesion through arts engagement for under-represented communities requires their highly developed skills across the four C's. As our research graduates go out into the world we know they can and will make a difference, and as many graduates do will return to QUT to share their knowledge and insights with the next generation of change-makers.

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Professor Carol Nicoll
Executive Dean, Faculty of Education

QUT's Faculty of Education is consistently rated as 'above world standard' in the Excellence in Research in Australia assessment. Our strength as a Faculty is directly tied to the efforts and expertise of our academic staff and research students. As Executive Dean of the Faculty, I take pride in knowing that we consistently graduate research students of the highest calibre through our MPhil, EdD, and PhD programs.

Our research graduates come to us from a wide range of backgrounds, often with significant professional experience in education and other fields. We are stronger through our personal and professional diversity, and in recognising this strength I also acknowledge our graduates whose research is undertaken in collaboration with other QUT faculties.

I am delighted to congratulate our 2020 graduates and to celebrate and share their research with you through this QUT Research eYearbook 2020, which showcases the exemplary work produced by graduates across our university.

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Distinguished Professor Patsy Yates
Executive Dean, Faculty of Health

Warmest congratulations on your well-deserved research achievements and graduating from QUT's Faculty of Health. We are committed to research excellence, and are honoured to recognise this year's graduating cohort as among our more than 1,300 health researchers currently working on ground-breaking discoveries with translational impact.

Together we improve the health of individuals and communities through research innovation that is informed by industry and community connections. Research by our graduates contributes to a body of knowledge that underpins important research advances, improved health care practices and skills, and has impact in communities, industry and government across the world. The work of our alumni is advancing health and wellness to address key challenges in personalised medicine, mental health, ageing, health equity, health systems and services and disease and injury prevention.

We are extremely proud of your achievements and commend your commitment to producing research of the highest calibre and wish you every success in your future careers.

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Professor Dan Hunter
Executive Dean, Faculty of Law

As Executive Dean of the Faculty of Law I am proud to present the achievements of our graduating higher degree research students in 2020.

The Faculty works hard to attract and support talented research students. This year those efforts, and the tremendous efforts of our graduating students and their supervisors, have been rewarded with the contributions that our research graduates have made to the disciplines of Law and Justice, which are showcased in this publication.

Congratulations to our graduates who have more than demonstrated the talent and capability to achieve further success in their chosen fields.

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Professor Troy Farrell
Acting Executive Dean, Science and Engineering Faculty

Congratulations on graduating from one of the nation's most collaborative research institutions. As Executive Dean (Acting) of the QUT Science and Engineering Faculty, I have the privilege of overseeing the inspiring outcomes achieved by our STEM research teams, including our researchers in training.

Collectively, we are working on some of the biggest challenges and opportunities facing Australia and the global community. Your contributions to these advancements are a source of great dynamism and innovation across our Faculty, and I hope that your experience at QUT has been equally rewarding.

I invite you to access QUT Momentum, a program and platform that supports doctoral graduates' transition from study to work. Thank you for sharing this formative part of your research journey with us and we wish you all the best in your careers in STEM, as well as your continued pursuit of new knowledge and positive, real-world impacts.

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2019 ODTA Winners

At QUT we celebrate our exceptional research students with our annual Outstanding Doctoral Thesis Awards.

QUT Business School

Dr Lina Xu

Simulation Methods for Stochastic Differential Equations in Finance

Supervised by Prof Stan Hurn, Dr Min Zhu

Creative Industries Faculty

Dr Rebekah Nicholas

Engagement With Digital Health Technologies

Supervised by Dr Marianella Chamorro-Koc, Dr Amanda Beatson, Prof Alethea Blackler

Faculty of Education

Dr Catherine Appleton

The Wounds of Separation: A Graphic Memoir About Forced Migration

Supervised by EM/Prof Kerry Mallan, Mr Craig Bolland

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Faculty of Health

Dr Joachim Surm

Molecular Insights into the Evolution of Novel Genes

Supervised by Prof Louise Hafner Bishop, Prof Jonathan Harris, Dr Peter Prentis

Dr Yen Lim

Oral Microbiome: A Novel Biomarker for Oral Cavity and Oropharyngeal Cancer Detection and a Potential Surveillance Tool for Post-treatment Monitoring

Supervised by A/Prof Chamindie Punyadeera, A/Prof Makrina Totsika

Dr Floraidh Corfee

Mental Health and Intensive Care: A Critical Analysis

Supervised by Dr Leonie Cox, A/Prof Carol Windsor

Faculty of Law

Dr Anne Matthew

The Conceptual Legitimacy of Support for Risk-Taking, Entrepreneurship and Innovation in Australian Corporate Law: A Theoretical Examination

Supervised by Prof Rosalind Mason, Prof Sharon Christensen

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Science and Engineering Faculty

Dr Jun Mei

Optimization of Two-dimensional Nanostructures for Rechargeable Batteries
Supervised by A/Prof Ziqi Sun, Prof Godwin Ayoko

Dr Mohamed Ahamed

Fire Performance and Design of CFRP Strengthened and Insulated Cold-Formed Steel Tubular Columns
Supervised by Prof Mahen Mahendran, Dr Keerthan Poologanathan

Dr Naeim Ezzatahmadi

Synthesis and characterisation of mineral based composite materials for the remediation of contaminated aqueous solutions
Supervised by A/Prof Yunfei Xi, Prof Godwin Ayoko, Prof Graeme Millar

Dr Tharindu Warnakulasuriya

Context Modelling for Single and Multi Agent Trajectory Prediction
Supervised by EM/Prof Sridha Sridharan, Prof Clinton Fookes

Dr Sahan Kurunera

A Coupled Finite-Volume & Discrete-Element Method to Investigate Particle-Laden Gas Flows and Particle Deposition in Metal Foam Heat Exchangers
Supervised by A/Prof Emilie Sauret, Prof YuanTong Gu

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Dr Niloufar Sarraf

Mapping the Neural Activities and Affective Dimensions of the ISP Model: Correlates in the Search Exploration, Formulation, and Collection Stages

Supervised by Dr Ian Stoodley, Prof Sylvia Edwards

Dr Ummul Sultana

Electrochemical Synthesis of Water Splitting Nanomaterials

Supervised by Prof Anthony O'Mullane, Prof Aijun Du

Dr Leah South

Contributions to Computational Bayesian Statistics

Supervised by A/Prof Chris Drovandi, Prof Tony Pettitt

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Country: Australia

Supervisor/s: Lawrence Neale (Queensland University of Technology), Louise Kelly (Queensland University of Technology)

Thesis title:

Athletes Behaving Badly. Team Identification and the Off-Field Behaviour of Athletes: Effects on Consumer Intention in Traditional and Non-Traditional Sporting Contexts

Description:

This research extends team identification and social identity theory by investigating whether fans react differently to off-field athlete behaviours based on their support for teams in traditional or non-traditional sporting leagues. The data from three independent samples indicates that prosocial and antisocial off-field athlete behaviour significantly influences consumer intention in a non-traditional setting, with results indicating the less identified a person is with their team the more susceptible they are to off-field athlete behaviour changing their consumer intention levels. Conversely the off-field behaviour of athletes did not significantly impact consumer intention among the traditional participants.

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Country: Sweden

Supervisor/s: Amisha Mehta (Queensland University of Technology), Bree Hurst (Queensland University of Technology), Amanda Beatson (Queensland University of Technology)

Thesis title:

Corporate Social Responsibility during Times of Crisis

Description:

The 2013 Rana Plaza factory collapse in Bangladesh extended a single, focal crisis organisation to ignite a catalyst for change across the fast fashion industry to create a crisis spillover. Through the lens of this global crisis, Coombs' (2007, 2015) Situational Crisis Communication Theory was employed to explore short- and long-term organisational response strategies through corporate social responsibility. The study found that crisis responsibility was not shared equally among implicated organisations and influenced variations in stakeholders' blame attributions. Through evidence-based guidelines, this study provides theoretical and practical implications for reputation management in light of a crisis spillover.

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Country: Australia

Supervisor/s: Adam Clements (Queensland University of Technology), Stephen Thiele (Queensland University of Technology)

Thesis title:

News Flow and Trading Activity: A Study of Investor Attention and Market Predictability

Description:

This thesis examines the relationship between investors' attention and movements in financial markets. Providing an explanation to the relationship between investor attention and market returns and return volatility, where attention is measured by Google search volume and two indirect price-based measures, investor attention does not contribute to return predictability however significant links to volatility are found. Furthermore, revisiting the joint volume-volatility relationship seeking to investigate the dynamic links of market volatility, trading volume, and investor attention (measured by Google search and Twitter tweet volume), investor attention provides a somewhat significant link for the rate at which investors seek market information.

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Hannah Altman

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Country: Canada

Supervisor/s: Benno Torgler (Queensland University of Technology), Robert Robergs (Queensland University of Technology)

Thesis title:

The Behavioural Economics of Organizational Inefficiency: The Example of the New Zealand Fitness Industry.

Description:

We determine the quality of exercise practitioners in New Zealand's fitness industry, given concerns expressed over quality, by constructing original data sets from publicly available information on exercise professionals and their gyms and on industry level education. We also develop a basic behavioural economics model to help determine the demand for and supply of quality exercise professionals. We find that there is a significant deterioration in the quality of practitioners engaged in this industry. Key to this ongoing problem is that clients can't and don't know everything relevant to their decisions and can't easily identify false and misleading information. This lends itself to errors in decision-making and moral hazard behaviour as clients form guesstimates as to the quality of exercise professionals and their gyms. These findings suggest that there is a market failure in the fitness industry, reducing client well-being, that can be addressed by government regulation.

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Jorge Fiestas Lopez Guido

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Country: Peru

Supervisor/s: Sven Tuzovic (Queensland University of Technology), Edwina Luck (Queensland University of Technology)

Thesis title:

Mobile-Assisted Showrooming and the Influence of Location-Based Advertising on Consumers' Purchase Intentions

Description:

Over the last decade, the retail industry has seen dramatic changes, driven by advancements of new retail and mobile consumer technologies, evolving consumer and shopping patterns, and a growing consumer trend towards showrooming. As smartphones become increasingly integrated into consumers' lives, they have also led to a new threat for retailers: "mobile-assisted showroomers", that is, consumers who avoid sales staff and rather rely on their smart phones as personal shopping assistant. The goal of this thesis is to investigate the phenomenon of mobile-assisted showrooming and to understand how location-based advertising can be utilized to engage with consumers more effectively. This research contributes to multiple literature streams, in particular omni-channel and showrooming literature, and offers empirical insights into attitudes and behaviors of mobile-assisted showroomers as well as enablers and barriers of location-based advertising to engage with showrooming customers.

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Country: China

Supervisor/s: Geemith Wickramasekera (Queensland University of Technology), Alvin Tan (Queensland University of Technology), Ying Xian Wang (Queensland University of Technology)

Thesis title:

The Analysis of the Relationship Between Family Involvement and Innovative Capability in Chinese Family SMEs

Description:

This study applied agency and socioemotional wealth (SEW) theory to investigate the relationship between family involvement and innovative capability within Chinese family Small to Medium Sized Enterprises (SMEs). A negative effect of family involvement on family firms' innovative capability was identified. Furthermore, the findings revealed that Human Resource (HR) redundancy within Chinese family businesses could moderate the relationship between family ownership and innovative input, as well as the relationship between family governance and innovative capability. The result will assist Chinese family SMEs' decision-makers make better trade-offs between innovative and HR strategies.

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Country: Jordan

Supervisor/s: Erica French (Queensland University of Technology), Bernd Irmer (Queensland University of Technology), Timothy Donnet (Queensland University of Technology)

Thesis title:

What is Just? How Do Today's Workforce Perceive Organisational Justice?

Description:

This thesis is an exploratory study investigating the perceptions and experiences of both supervisors and subordinates in a university setting. The research reported provides an improved understanding of what justice means in the eyes of supervisors and subordinates in the workplace today. This study develops a contemporary view of organisational justice, as workplaces have changed considerably since the foundation of current organisational justice literature and assumptions that were founded in the previous century. In doing so, the findings and discussion provide an updated picture of what organisational justice looks like in the workplace today.

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Country: Australia

Supervisor/s: Craig Furneaux (Queensland University of Technology), Wendy Scaife (Queensland University of Technology)

Thesis title:

Accountability in a Horticultural Marketing Co-operative: Perceptions from Grower Members

Description:

Horticultural co-operatives play an important role in food quality and security, economic stability and the welfare of regional and rural communities around the world. In this qualitative study, a conceptual framework of accountability using: to whom; for what; how; with what standards; and with what consequences has been adopted. Semi-structured interviews with growers revealed co-operative principles were not uniformly prioritised and new dimensions of accountability, latent and incremental, were evident. These findings, relevant to global food security, aid understanding of accountability in the fresh food supply chain and contribute to thinking about co-operatives.

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Lisa Jankowski

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Country: Australia

Supervisor/s: Cameron Newton (Queensland University of Technology), Timothy Donnet (Queensland University of Technology)

Thesis title:

Transformational Leadership, Follower Organisational Citizenship Behaviours and the Influence of Follower Personality

Description:

This thesis examined the moderating role of follower personality on the relationship between transformational leadership and organisational citizenship behaviours (OCBs) using the five-factor personality model. The findings indicated that transformational leadership is positively related to increased OCBs and that certain personality types benefit more from this leadership style. Most notably, those who self-identify as being high in the trait of neuroticism display higher levels of organisational citizenship behaviours in the presence of a transformational leader.

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Maria Khan

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Country: Australia

Supervisor/s: Jannine Williams (Queensland University of Technology), Penelope Williams (Queensland University of Technology), Erica French (Queensland University of Technology)

Thesis title:

Analysing Media Framing of Women in Contemporary Australian Business Leadership

Description:

This study explored media framing of leadership and gender in an Australian business context. The findings indicated complex differential framings, with a dominance towards traditional and heroic leadership whilst simultaneously emphasising post-heroic perspectives. Media framing of individual leaders highlighted tensions between expectations to perform leadership and conforming to gendered cultural norms. This research contributes to critical leadership studies by providing insight into the multidimensionality of heroic and post-heroic forms of leadership. There are also practical implications for how organisations and individuals perceive and enact leadership in work contexts.

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Neville Marshall

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Country: Australia

Supervisor/s: Erica French (Queensland University of Technology), Graham Davidson (Queensland University of Technology), Stephen Cox (Queensland University of Technology)

Thesis title:

An Exploration of Intra-Organisational Project Benefit Knowledge Transfer Barriers

Description:

The unique characteristics of projects combined with benefit management challenges suggest the existence of impediments to benefit knowledge transfer. An existing model containing nine knowledge transfer barriers was employed to explore the specific problem of benefit knowledge transfer from project staff to benefit management staff. The study focus is project benefit knowledge transfer barriers at the individual level within a specific organisation. The case study used interviews and project documentation to gather evidence revealing the prevalence of four barriers when transferring benefit knowledge. Addressing these barriers can improve benefit management. This finding provides a contemporary addition to knowledge transfer theory.

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Rizal Rickieno

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Country: Indonesia

Supervisor/s: Connie Susilawati (Queensland University of Technology), Mirko Guaralda (Queensland University of Technology)

Thesis title:

University Coworking Space as a Collaborative Learning Space

Description:

QUT Foundry is a university coworking space that is actively involved in supporting and promoting entrepreneurship for students, staff and alumni to develop entrepreneurship and innovation to grow on campus. This thesis explores the role of the QUT Foundry in promoting entrepreneurship and collaborative learning activities among its members, through interviews with QUT Foundry staff and members. Using qualitative methods approach, this study identified that combining the concept of place, people and system can provide greater opportunities to generate creativity and innovation within university coworking spaces.

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Tahrima Ferdous

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Country: Australia

Supervisor/s: Muhammad Ali (Queensland University of Technology), Erica French (Queensland University of Technology)

Thesis title:

Flexible work practices and employee outcomes: The role of gender, social support and flexibility stigma

Description:

Through the lens of social exchange theory and signalling theory, this study investigates the impact of perceived availability of flexible work practices (FWPs) and usage of FWPs on employee outcomes namely performance, wellbeing, work-life balance, turnover intentions and career consequences. Utilising gender role and ecological systems theory, it also explores the moderating effects of gender, social support and flexibility stigma on FWPs-employee outcomes relationship. Using survey data, this study finds positive impacts of FWPs on wellbeing, work-life balance and negative impact on turnover intentions. The findings provide insights to practitioners and policymakers into the relationship between FWPs and employee outcomes.

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Victoria Lister

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Country: Australia

Supervisor/s: Lisa Schuster (Queensland University of Technology), Dominique Greer (Queensland University of Technology)

Thesis title:

Same Service, Different Setting: Exploring Atypical, Temporary Servicescapes

Description:

Comparing the experiences of service providers and consumers of a service delivered on and off-site, this thesis found their well-being was maintained despite physical and social differences in the delivery setting. This was due to the personal attributes of the service providers, which enabled them to maintain their equilibrium and that of their clients and replicate the hospitality culture of their regular environment in the temporary setting. An investment in the professional-personal development of service providers is implied for organisations wishing to maintain the same quality of service in different settings.

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Yang Zhang

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Country: China

Supervisor/s: Shane Mathews (Queensland University of Technology), Alvin Tan (Queensland University of Technology)

Thesis title:

Leveraging Dynamic Capabilities in the Creation of Virtual Servicecape in China

Description:

This thesis contributes to the under-researched phenomenon of digital transformation in the creation of virtual servicescape with a Service Dominant Logic. By investigating the virtual firm's transformation processes in China, the research sheds light on how competitive advantage is sustained in deep uncertainty environment. This research examines how firms close capability gaps and how dynamic capabilities are being leveraged to achieve organisational agility in the creation of virtual servicescape. The research highlights a set of specific dynamic capabilities and resources that help to guide organisations through deep uncertainty. The findings of the study have important contributions and can offer a point of departure for future scholars investigating the development of dynamic capabilities in rapidly changing environments.

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Country: China

Supervisor/s: Amanda Beatson (Queensland University of Technology), Steven Pike (Queensland University of Technology)

Thesis title:

Salient Attributes of Accommodation Choice for Short-Break Holidays

Description:

With short-break holidays increasing in popularity, identifying accommodation attributes sought by travellers has attracted the attention of scholars. In addition to identifying attributes, the impact of cultural factors on these attributes remain unknown. Using the Repertory Test, this thesis identifies accommodation attributes for short-break holidays, important to travellers of Chinese descent in Brisbane. The results suggest that 'availability of a restaurant' and 'staff attitude' are the top two attributes. This thesis provides valuable insights for the Australian accommodation industry, helping practitioners better understand travellers' needs for their short-break holidays and predict which accommodation attributes travellers consider the most important.

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Country: Denmark

Supervisor/s: Nerina Jimmieson (Queensland University of Technology), Lisa Bradley (Queensland University of Technology)

Thesis title:

Employee Attributions About Wellness Programs: Moderating the Impact of Job Demands on Employee Outcomes

Description:

Using a cross-sectional research design involving data from 524 Australian employees, this study examined the extent to which attributions about wellness programs moderate the relationship between job demands and employee outcomes. The interaction effects varied depending on the employee outcome in question and revealed that, in the context of job demands, HR attributions do not have an exclusively positive or negative influence but can be associated with favourable or unfavourable employee outcomes. Moreover, attributions were positively correlated with each other, indicating that it is possible to hold competing views simultaneously and that multi-faceted profiles may exist.

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Country: Australia

Supervisor/s: Rebekah Russell-Bennett (Queensland University of Technology), Sven Tuzovic (Queensland University of Technology)

Thesis title:

Back on the Market: Understanding Heterosexual Mature Adult Protective Sexual Behaviours

Description:

More heterosexual mature adults are re-entering the dating market with liberal sexual attitudes, low perceptions of risk and limited experiences of condom use. This research uses social marketing and sexual health literature to explore their experiences of condom use. The research revealed that connection, desire, and gratification determine condom use behaviour. Theoretical contributions include: the customer experience elements of condom use, the shared sphere of sexual experience, and the anti-experience of condom use. The result of this research is a deeper understanding of heterosexual mature adult sexual behaviours and complex behavioural experiences that involve more than one person.

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Country: Australia

Supervisor/s: Rebekah Russell-Bennett (Queensland University of Technology), Dominique Greer (Queensland University of Technology)

Thesis title:

The Co-Creative Classroom: Does Value Co-Creation Inhibit or Facilitate Customer Engagement in Low Socioeconomic Education Services?

Description:

Education changes lives, but many low-socioeconomic adolescents struggle to perceive the value of attaining a secondary school education. Despite the efforts of schools, many of these difficult-to-engage customers do not perceive value in engaging. This research draws on literature from services marketing, social marketing and education to examine how value could be co-created with vulnerable young customers. The study involved 20 semi-structured interviews at a single school located in a low-socioeconomic area. The research found that students are capable of value co-creation but face limited opportunities to engage in these behaviours. Furthermore, if students are involved in co-creating value in the classroom, this would heighten their engagement. The research recommends that schools look to provide opportunities to authentically co-create value with their customers and involve them more meaningfully in the design of their education experience.

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Country: Australia

Supervisor/s: Larelle Chapple (Queensland University of Technology), Janet Mack (Queensland University of Technology), Rania Shibl (University of the Sunshine Coast)

Thesis title:

Fraud and Financial Misconduct Reporting: The Perceived Importance of Report Recipient Characteristics

Description:

Whistleblowing remains the most effective means of combating fraud. However, encouraging people to come forward and put themselves in a vulnerable position remains a challenge. Against the backdrop of lapses in public sector ethics, this research focused on the effectiveness of Public Interest Disclosure legislation and the difference between protections offered to potential whistleblowers in the public and private sectors. Using the whistleblowing triangle, this research showed that potential whistleblowers seek report recipients with certain characteristics. These characteristics depend on the whistleblowers' perceived behavioural control and whether the whistleblowers believe the wrongdoing constitutes occupational or organisational deviance.

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Supervisor/s: Paula Dootson (Queensland University of Technology), Thamer Ahmad S Baazeem (King Abdulaziz University), Lawrence Neale (Queensland University of Technology)

Thesis title:

Complying with Religious Codes: Investigating Religiosity and Consumer Behaviour

Description:

Group norms influence individual's behaviour as a member of the group. However, a conflict can arise and individuals must choose between conforming to the group norms or to their own preferences. This research investigated how group norms influence consumer behaviour when individual and group consumption preferences differ and was conducted in religious context. The results of this dissertation reveal that religion is not a homogeneous construct and, therefore, must be considered as more than a demographic variable for consumer behaviour. This research also broadens our understanding of how groups can influence individual behaviour in the presence of conflicting consumption preferences.

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Supervisor/s: Changxia Ke (Queensland University of Technology), Gregory Kubitz (Queensland University of Technology), Bill Von Hippel (University of Queensland), Lionel Page (Queensland University of Technology), Marie Villeval (French National Centre for Scientific Research: Institute of Researches on Catalysis and Environment)

Thesis title:

Overconfidence as an Interpersonal Strategy

Description:

Standard economic models assume that individuals collect and process information in a way that gives them a relatively accurate perception of reality. However, data shows that individuals are often overconfident, which can have detrimental economic consequences. This thesis aims to show that individuals benefit from being overconfident in strategic interactions, which would explain the persistence of this bias despite its social cost. This thesis contributes to the literature by enhancing our understanding of the situational determinants of overconfidence in social interactions and lay the foundations to improve policies intended to prevent or limit its negative effects.

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Country: New Zealand

Supervisor/s: Peter O'Connor (Queensland University of Technology), Cameron Newton (Queensland University of Technology)

Thesis title:

Why Extraverts Become Leaders More Often than Introverts and the Implications for Psychological Well-Being

Description:

Extraverts become leaders more often than introverts, however it is not clear why this occurs or what the psychological consequences are for introverts occupying leadership roles. This thesis shows that extraverts have fewer negative thoughts about future leadership situations, behave in such a way as to positively influence what others think of their leadership potential, and enjoy an associated benefit in acute emotional well-being because of these behaviours. Reassuringly, however, introverts can enjoy these same benefits when they enact extraverted behaviours and do not experience any long-term psychological costs as a direct result of being promoted into a leadership role.

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Country: Australia

Supervisor/s: Adam Clements (Queensland University of Technology), Daniel Smith (Queensland University of Technology)

Thesis title:

A Behavioural and Biological Study of Risk and Ambiguity

Description:

This thesis focuses on how individuals and groups perceive and behave in the face of risky and ambiguous outcomes. There has been much research on how individuals behave in these situations, but much less investigation into when and why they behave in this way. These questions are addressed from a behavioural, neuro-biological and environmental perspective and answered using individual and group lab-based experiments. The results of these experiments indicate that the amount of information presented, prevailing sentiment and biological factors all influence how we make decisions and the extent to which these decisions are “logical”.

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Country: Thailand

Supervisor/s: Steven Pike (Queensland University of Technology), Amanda Beatson (Queensland University of Technology)

Thesis title:

Culinary Destination Consumer-based Brand Equity: Exploring the Influence of Tourist Gaze in Relation to FoodPorn on Social Media

Description:

The role of FoodPorn, or food photographs, may aid in forming an image of a culinary destination. Due to the intangible nature of travel experiences, Foodporn can give consumers a pre-taste of a destination. Focusing on the increasing influence of user-generated content on social media, this research advances our understanding of how gazing upon FoodPorn enhances culinary destination consumer-based brand equity. This study developed an extension of a model that measures culinary precinct destination attractiveness, and the role of FoodPorn in influencing perceptions held by Brisbane consumers of South Bank, Sunnybank and Broadbeach as culinary precincts.

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Country: Australia

Supervisor/s: Kerrie Sadiq (Queensland University of Technology), Bronwyn Mccredie (Queensland University of Technology)

Thesis title:

Corporate Tax: An Evaluation of the Full Publicity of an Action

Description:

This thesis, using Rawls' publicity principles to frame the investigation, examines Australia's Report of Entity Tax Information (ROETI). It provides evidence that; (1) Australia is 'one of the leading nations' in increasing the transparency of corporate tax actions to the public and the implementation of the ROETI contributed to this; (2) the ROETI provides new corporate tax information, compared to corporate annual reports, to the Australian public to enable accountability mechanisms; and (3) that market response to the ROETI releases indicate these actions are congruent with public expectations, thus achieving full publicity and adhering to the social contract.

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Country: China

Supervisor/s: Radhika Lahiri (Queensland University of Technology), Sharmila Gamlath (Queensland University of Technology)

Thesis title:

Essays in Energy, Environmental and Health Economics

Description:

This thesis comprises of three essays that explore issues related to energy economics, environmental economics and health economics. The first essay discusses the monetary policy response to commodity price shocks in the U.S., Canada and Mexico in the presence of NAFTA. The second essay investigates the relationship between carbon emissions and urbanization in different sectors across economies. The third essay studies the theoretical and empirical relationship between inequality aversion and public health expenditures. The common thread running through these essays is the use of cross-country analysis for deriving evidence-informed insights of relevance to policies in these domains.

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Country: Korea,(Sth) Republic Of

Supervisor/s: Hyun Jin (Queensland University of Technology), Amanda Beatson (Queensland University of Technology), Clinton Weeks (Queensland University of Technology)

Thesis title:

Self-regulation and Intertemporal Consumer Impatience

Description:

This thesis finds that self-regulation is a source of impatience in everyday consumer decision-making. Nine studies show that performing self-regulation (e.g., suppressing emotions, dieting) makes people more attentive to time, so that future time intervals are perceived as longer, and impatience is increased. Intertemporal impatience influences the value of products that will be delivered in the future, the willingness to pay for expedited delivery, and the desire for product attributes that save time. Further, the findings provide a theoretical framework for understanding why self-regulation can impact intertemporal judgments in domains other than the domain in which self-regulation initially occurred.

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Country: Indonesia

Supervisor/s: Hyun Jin (Queensland University of Technology), Louise Kelly (Queensland University of Technology)

Thesis title:

Motivation Shifting in Giving: Moral Balancing Effects in Prosocial Context

Description:

This thesis investigated the links between prior prosocial decision and following prosocial motivation, whether to benefit oneself or others. In a series of experiments, this thesis revealed that after making donation, people are more generous if the charity uses self-benefit rather than other-benefit message appeals. In contrast, after rejecting a charity request, people responded more positively to other-benefit than self-benefit message appeals. This study is among the first to examine the influence of moral balancing effects and message appeals on willingness to donate. The results of the study may contribute to the area of consumers' ethical decisions making and morality concerns.

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Country: Chile

Supervisor/s: Radhika Lahiri (Queensland University of Technology), Viet Ngu Hoang (Queensland University of Technology)

Thesis title:

Income Inequality in Natural Resource-Rich Countries: Empirical Evidence from Chile

Description:

This thesis analyses how the degree of dependence on natural resources can help explain the persistently high levels of income inequality in Chile. Using data at the municipal level, it also explores the causal effect of income inequality on the level of efficiency of local authorities. Finally, given the social upheaval experienced in Chile in 2019, the thesis investigates the impact of economic and racial heterogeneity on the erosion of social cohesion in the country.

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Country: Australia

Supervisor/s: Janice How (Queensland University of Technology), Peter Verhoeven (Queensland University of Technology)

Thesis title:

Hedge Fund Activism, Innovation and Firm Value

Description:

Using an endogenous growth framework, this thesis models and tests whether hedge fund activists add value by correcting inefficient R&D investment at their targets. While activists are more likely to target firms over-investing in R&D, I find no evidence that suggests they correct inefficient R&D investment despite decreasing R&D expenditure at target firms. Further robustness highlights the negative impact of hedge fund activism on value creation after controlling for the activist's stated objectives and reputation, quantile treatment effects, and superior stock selection ability. Overall, my research offers new insights into the governance role and value implications of hedge fund activism.

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Country: Australia

Supervisor/s: Erica French (Queensland University of Technology), Muhammad Ali (Queensland University of Technology)

Thesis title:

Gender Equality in Project-Based Organisations

Description:

This thesis is a mixed methods research study that focuses on the evaluation of gender equality in the project-based organisations. It aimed to explore how gender equality initiatives affect representation of women at various levels of organisations and to understand the impact of women's representation on organisational outcomes. It also aimed to explore the issues of selection and implementation of HR initiatives designed to address equality and diversity. This research extends our knowledge of the effectiveness of gender equality initiatives on women's representation and the organisational practices in the selection and implementation of formal HR initiatives designed to address it.

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Country: Malaysia

Supervisor/s: Louisa Coglean (Queensland University of Technology), Viet Ngu Hoang (Queensland University of Technology), Sean Pascoe (Commonwealth Scientific and Industrial Research Organisation (CSIRO))

Thesis title:

An Economic Study of Sea Bass Production in Peninsular Malaysia

Description:

This thesis presents the first detailed economic analysis of the sea bass industry in Malaysia that considers all stages of the aquaculture system from nursery to the grow-out sector. Drawing on-farm survey data, this thesis explores the financial and economic performance of the industry, providing information to managers and farmers about the economic performance of the different sectors. Using productivity analysis, including stochastic frontier analysis and data envelopment analysis, the key factors affecting productivity of the Malaysian sea bass industry are identified. This analysis provides critical insights into the management of the industry and aquaculture policy in Malaysia.

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Country: Australia

Supervisor/s: Benno Torgler (Queensland University of Technology), Uwe Dulleck (Queensland University of Technology), David Savage (University of Newcastle)

Thesis title:

Interacting Online: Examining Behaviour in a Crowdfunding Setting

Description:

This thesis investigated how communication in online crowdfunding influences monetary contributions to projects and project creators' behaviours in second projects. Underlying cues such as sustainability signals and monetary discussion affected contributions on Kickstarter, while research categorisation of projects on Experiment.com did not, whilst feedback from past project outcomes influenced project creators' willingness to create further projects on Kickstarter. Moreover, the feedback also caused changes in the information provided on subsequent projects.

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Country: Indonesia

Supervisor/s: Stuart Tooley (Queensland University of Technology), Peter Green (Queensland University of Technology)

Thesis title:

Indonesian State-Owned Enterprises and Earnings Quality

Description:

This thesis extends the earnings quality literature through its focus on two Indonesian phenomena - a two-stage approach to International Financial Reporting Standards (IFRS) convergence and partial privatisation of State-owned enterprises (SOEs). Using extensive panel data from the Indonesian stock exchange the study finds that accrual quality of listed SOEs has significantly improved under IFRS, but not earnings persistence or earnings smoothness. Employing the latent growth curve model, the study finds that the second stage of convergence had a more pronounced impact on accrual quality. Comparatively, the rate of improvement in accrual quality was higher for SOEs than non-SOE listed companies.

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Country: Australia

Supervisor/s: Lisa Schuster (Queensland University of Technology), Hyun Jin (Queensland University of Technology)

Thesis title:

Gamification and Behaviour Change: Understanding the Mechanism and its Implications for Social Marketing

Description:

While PokÚmon Go, Fitbit and other contemporary examples of gamification (game design in non-game contexts) highlight the potential for play to support behavioural change, negative responses in autonomy restrictive contexts challenge our understanding of how gamification works. This thesis explores the capacity for context to influence how gamification products are experienced across social marketing domains of health and the workplace. In particular, the negative influences of controlling rewards, punishment and social pressure are examined through the lens of Self Determination Theory to explain why similar gamification products provide different outcomes in different environments.

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Country: Bangladesh

Supervisor/s: Andrea Blake (Queensland University of Technology), Connie Susilawati (Queensland University of Technology)

Thesis title:

Overcome the Barriers to Private Sector Housing Development in a Developing Country: A Case Study in Dhaka, Bangladesh

Description:

The study investigates supply-side barriers to private real estate housing development in developing countries using Dhaka, Bangladesh, as a case study. Using the Delphi method, content, and thematic analysis, corrupt bureaucratic mechanisms, and delays in planning approvals were identified as the most influential supply-side barriers to housing development. The study recommends the development of a streamlined application system to reduce corruption and fast track planning approvals. The findings of the study contribute to affordable housing literature and are of assistance to government regulators and policy makers in formulating appropriate policies for housing development in the context of developing countries.

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Country: China

Supervisor/s: Anup Basu (Queensland University of Technology), Adam Clements (Queensland University of Technology)

Thesis title:

Essays on the Information Flow Between Equity and Credit Markets: Before, During and After the Financial Crisis

Description:

This thesis examines the information flow between equity, credit default swap (CDS) and bond markets between 2003 and 2017 using firm-level data for developed and emerging countries. The findings suggest that the information flow between financial markets is dependent on the market condition. The research demonstrates that the relationship between equity and credit markets has been restructured since the global financial crisis with more rapid adjustment of CDS market to equity market returns. The strength of interaction between equity and credit markets is found to be related to the creditworthiness of the concerned firms.

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Country: Australia

Supervisor/s: Sean Pascoe (Queensland University of Technology), Louisa Coglean (Queensland University of Technology), Carol Richards (Queensland University of Technology)

Thesis title:

The Value of Fisheries for Tourism and the Local Coastal Community

Description:

This thesis identifies the benefits generated by the fishing industry with respect to tourism and providing local seafood. Using an interdisciplinary approach (economics and social science), the thesis explores how fisheries and seafood are portrayed in online coastal tourism material and quantifies the value of fisheries and seafood to tourists and Queensland residents. The studies provide a better understanding of how the 'local' aspect of seafood affects tourists' overall coastal holiday experience and examines the importance of purchasing local seafood for local consumers. This thesis also examines how these benefits can be maximized by the fishing and tourism industries.

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Supervisor/s: Edwina Luck (Queensland University of Technology), Shane Mathews (Queensland University of Technology), Sukanlaya Sawang (Queensland University of Technology)

Thesis title:

A Cross-Country Study of Motivations for eWOM Continuity in Review Sites: Do Cultural Values Matter?

Description:

This research studied reviewer motivations for electronic word of mouth (eWOM) continuity and how individual and collective cultural values influence these motivations. The findings highlight the processes of extrinsic motivations (rewards) and intrinsic motivation (self-presentation) within eWOM. The research demonstrates that a combination of affective motivations (positive and negative consumption-related feelings) and cognitive motivations (helping and warning others) drives eWOM. The research uncovers review (dis)confirmations as important motivations to continue eWOM. The results reveal the impacts of reviewers' individual cultural values on motivations for eWOM continuity.

Introduction

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Country: Australia

Supervisor/s: Hyun Jin (Queensland University of Technology), Brett Martin (Queensland University of Technology)

Thesis title:

Consumer Responses to Online Recommendations: The Effects of Language Assertiveness on Website and Product Attitudes

Description:

This research looks at how people's online shopping attitudes change when retailers use different language to make product recommendations. It shows that certain language can result in the perception of the retailer and product being more positive, depending on how much attachment is felt towards the retailer, how well known the product is and the product's price. The research presents a new way of analysing the effectiveness of online product recommendations.

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Country: Germany

Supervisor/s: Anup Basu (Queensland University of Technology), Uwe Dulleck (Queensland University of Technology), Julie Henry (University of Queensland), Nicolas Cherbuin (Australian National University)

Thesis title:

Financial Decision Making in Late Adulthood

Description:

Financial decision-making is an important determinant of financial well-being. We investigated the willingness to delegate financial decision-making within older couples. We further analysed which cognitive domains are predictive for financial capacity in late adulthood. Our results show that especially men in late adulthood systematically under-delegate financial decision making. An option to revoke delegation significantly increases the willingness to delegate. We show that age has a negative influence on executive functioning and memory, which are positively correlated with financial capacity. Assessment of executive functioning could be utilised to help identify older adults who are at risk of making poor financial decisions.

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Country: Australia

Supervisor/s: Adam Clements (Queensland University of Technology), Aubrey Hurn (Queensland University of Technology)

Thesis title:

An Analysis of the Impact of High Frequency Trading on Equity Markets

Description:

This thesis investigated the impacts of high frequency traders on the equity markets. At a base level, high frequency traders improve market liquidity and efficiency because they both compete with and undercut each other, thereby benefitting slower traders. However, high frequency traders have increased both systematic and systemic risk within the equity markets and have also increased liquidity resilience commonality during unfavourable market conditions. Overall, the results suggest that high frequency traders contribute both positively and negatively to the market, thus making it difficult to draw a clear conclusion about their overall value to the market.

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Country: Brazil

Supervisor/s: Amanda Beatson (Queensland University of Technology), Dominique Greer (Queensland University of Technology)

Thesis title:

Improving The Customer Experience Through The Use of Unearned Preferential Treatment

Description:

The notion that preferential treatment promotes customer favourable behaviour has been widely accepted by practitioners and academics. More specifically, extant literature claims that in its earned form it is always linked to positive outcomes for advantaged customers. As opposed, its unearned counterpart should be employed with caution by practitioners once it triggers perceptions of unfairness and discomfort. This thesis employed a mixed method approach which allowed for the identification of the main sources of negative associations to both preferential treatment types', categorized as "harm to others" and "uncaring delivery". It identified the specific moral emotions of shame and embarrassment as being a function of the type of preferential treatment being offered. Lastly, empirically tested for solutions to maximize the customer experience with unearned preferential treatment, generating delight.

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Supervisor/s: Brett Martin (Queensland University of Technology), Dominique Greer (Queensland University of Technology)

Thesis title:

The Effect of Interpersonal Touch During Service Recovery

Description:

Interpersonal touch is frequently promoted for its positive outcomes in business communication. Frontline employees touch consumers primarily to foster a better consumer-employee relationship, leading to higher revenue. This thesis examines how consumers respond to an employee touch during a service recovery. Using three experiments, this thesis addresses the following research gaps: (a) the absence of literature on the effects of interpersonal touch during service recovery; (b) understanding the joint effect of interpersonal touch and perceived employee responsibility during service recovery; and (c) the absence of empirical analysis of interpersonal touch mediators regarding interpersonal touch during service recovery.

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Country: Sri Lanka

Supervisor/s: Muhammad Ali (Queensland University of Technology), Erica French (Queensland University of Technology)

Thesis title:

Determinants and Consequences of Employee Networking Behaviours

Description:

This research investigated the determinants and consequences of employee networking behaviours in the context of employee gender and ethnicity. A mixed-method research design was used to collect data from the private sector employees in Sri Lanka. The key findings of the study show that employees' personality traits, political skills and mentoring determine their networking behaviours. The results further demonstrate that employees have different networking behaviours depending on their gender and ethnicity. Moreover, both internal and external networking behaviours assist employees to improve their work outcomes. The findings contribute to the advancements of networking theories and offer insights for practitioners.

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Supervisor/s: Peter Verhoeven (Queensland University of Technology), Jerry Ho (Queensland University of Technology), Janice How (Queensland University of Technology)

Thesis title:

An Analysis of the Performance of the Indonesian Treasuries Market

Description:

This thesis examines the performance of the discriminatory-price auction relative to the uniform-price auction in the Indonesian treasuries? market. Employing a counterfactual analysis, it derives optimal bidding conditions for both auction methods. For a large sample of Islamic (Sukuk) and conventional treasury bill auctions between 2003 and 2017, the results show that switching from a discriminatory-price auction to a uniform-price auction is expected to improve both auction revenue and efficiency. These benefits are especially pronounced during times of high market uncertainty, but decline with the level of bidder competition.

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Supervisor/s: Benno Torgler (Queensland University of Technology), Uwe Dulleck (Queensland University of Technology)

Thesis title:

Rehumanizing Science: Three Studies on Behavioural Scientometrics.

Description:

This PhD project explores the relationship between scientists' self-esteem, physical appearance, and writing style, on the one hand, and their scientific achievement, social recognition, and collaboration opportunities, on the other hand. The studies employ an empirical method and address loosely related topics. In each, distinct behavioural measurements for the items has been investigated. The thesis presented the research questions that are relevant to the understanding of scientists' psychological and social characteristics, with methodological approaches drawn from new developments in data mining.

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Supervisor/s: Sandeep Salunke (Queensland University of Technology), Kavoo Mohannak (Queensland University of Technology)

Thesis title:

Exploring the Role of Customer Heterogeneity in Innovation-based Competitive Strategy: A Dynamic Capabilities Perspective

Description:

This study examines how customer heterogeneity can be a useful resource for innovations in service sector. Heterogeneity among customers can be seen in relation to their needs, knowledge and relationships with the service provider. Using the dynamic capability view, this study states that firms require knowledge integration capabilities to identify, capture and combine customer heterogeneity related knowledge with firm's know how. Successful knowledge integration leads to innovations and ultimately enhanced firm performance. The findings of this study assist managers to view customer heterogeneity as a resource rather than a problem to mitigate.

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Supervisor/s: Larelle Chapple (Queensland University of Technology), Elisabeth Sinnewe (Queensland University of Technology), Shamima Haque (University of Aberdeen)

Thesis title:

Corporate Sustainability in Australia: Performance, Disclosure and Governance

Description:

This thesis focuses on sustainability disclosure, sustainability performance, and sustainability committee. Analysing a sample of Australian firms, the thesis found that good performers disclose more information and communicate in optimistic, certain, and clear terms; they also present their information in a more readable way; the experience of sustainability disclosure improves the performance, and sustainability committee also contributes to the performance. The findings should of interest to investors, directors, managers, and regulators in Australia.

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Supervisor/s: Charles Robb (Queensland University of Technology), Daniel Mckewen (Queensland University of Technology)

Thesis title:

Semiotics of Disillusionment: Protest and Reframing Australia's Political Spectacle Through DÚtournement

Description:

This practice-led research project explores and expresses my disillusionment with the dysfunctions of the political establishment in Australia. This is achieved by reframing the visual elements of political spectacle through the installation of video, audio and sculpture, deployed in public and gallery settings. The research is enacted through a RanciPrian lens and uses a practice-led methodology, deploying the Situationist method of dÚtournement to de-stabilise points of symbolic reference appropriated from Australian politics.

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Supervisor/s: Kevin Sanson (Queensland University of Technology), Lee McGowan (Queensland University of Technology), Tim McGahan (Blacklab International), Jean Burgess (Queensland University of Technology)

Thesis title:

Understanding the 'Blended Creative': Examining a New Role in Screen Media Production

Description:

This project identifies an emergent creative profession that leverages the benefits of affordable production technologies and digital distribution platforms to service small- to medium-sized advertising clients. It employs a practice-led research approach that aligns reflective practice theory and a critical review of existing literature with four industry-based case studies from my own professional practice. It argues that this emergent profession-called the 'blended creative'- services clients who previously lacked the resources to produce high-quality advertising content, and calls for a process of ongoing learning and openness to change in order to navigate the precarity of a creative career.

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Supervisor/s: Christy Collis (Queensland University of Technology), Kristina Kelman (Queensland University of Technology)

Thesis title:

Too Old to Rock? Investigating the Queensland Mid-Career Music Scene

Description:

'Too Old to Rock: Investigating the Queensland Mid-Career Music Scene' examines the career support needs of independent mid-career musicians in Queensland and provides a contextual review of the musical landscape and the state of independent mid-career musicians in Queensland. The average age of a working artist in Australia is 46 years old and artists in Australia work well into old age in their creative work. In the Australian population, established artists are practising for longer and there are many professional mid-career artists who will work on their creative work for some time in the future. This study focused on this large group of established mid-career musicians (with 15 years or more professional experience) in Queensland, on how they conduct their professional practice or careers long-term, and on what professional development is accessed or required by them in the middle of their career.

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Country: Australia

Supervisor/s: Daniel Mckewen (Queensland University of Technology), Charles Robb (Queensland University of Technology), Mark Pennings (Queensland University of Technology)

Thesis title:

Consuming Conflict: Militainment, Desire and Virtual Reality in Contemporary Art

Description:

This research project used VR technologies in a contemporary art practice to creatively and critically investigate military-themed entertainment (militainment). The project culminated in a series of VR art installations that reinterpreted militaristic video games, films, and histories to question their influence on both the artist-researcher as well as broader contemporary culture. Although VR technology has been present in contemporary art for decades, its relationship to discourses of militainment and histories of armed conflict remains under-explored in a creative practice research context. This project utilised auto-ethnography and experimental creative practice to explore an affective relationship with these discourses; generating new creative responses to the pervasive social influence of military screen-culture.

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Country: Australia

Supervisor/s: Craig Bolland (Queensland University of Technology), Rohan Wilson (Queensland University of Technology)

Thesis title:

Colonising Madness: How can magical realism be used to represent the experience of mental illness?

Description:

This practice-led project asks: how do writers of madness memoirs represent the discontinuity and incoherence of the madness experience, and how do I, as a writer, approach this? It finds that while the experience of madness is discontinuous and incoherent, writers choose to reconfigure their experiences into traditional narrative forms that adhere to expectations of continuity, coherence, and temporal linearity. As a practice-led project, in interrogating the research question, it comprises an academic exegesis, which employs the theories of sociologist, Arthur W. Frank, to justify discontinuous narrativisation and a madness memoir, entitled The Wolf.

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Supervisor/s: Stephanie Hutchison (Queensland University of Technology), Gene Moyle (Queensland University of Technology)

Thesis title:

Embodied Sampling as a Process of Developing an Individual Moving Identity for Male Dance Professionals

Description:

This research project investigated individual Australian professional male contemporary dancers' creative practice, to consider how the concept of 'moving identity' develops over a professional dance career. The results from the research study demonstrated that each 'moving identity' of the three independent Australian professional male dancers interviewed developed in multivariate ways over their careers as dance practitioners. Established inside the researcher's practice-led research were a publicly archived series of choreographic scores and improvised online videos entitled 'The Museum of Curiosities'. In conjunction, a resourceful toolbox of 'embodied sampling' strategies was developed from the researcher's creative practice when investigating his moving identity.

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Country: Australia

Supervisor/s: Evonne Miller (Queensland University of Technology), Elinor Buys (Queensland University of Technology)

Thesis title:

Operationalising Community Disaster Resilience: The Role of Place-Based Community Organisations

Description:

This thesis examines how place-based community organisations can play an effective role in the operationalisation of community disaster resilience. This study has explored the roles delivered by two place-based community organisations during the Brisbane 2011 flood, providing important new knowledge on how their roles were delivered, identifying the influence of the characteristics of community disaster resilience and key elements of social capital, as well as examining learnings from international models of community led responses. The framework developed through this research provides a practical and viable mechanism to activate the vision of disaster resilience outlined in policy frameworks in Australia. This framework has suggested a departure from a traditional 'top down' approach to disaster resilience, presenting a crucial opportunity to strengthen the capacity of the disaster management system to respond to an increasing frequency of disaster events.

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Supervisor/s: Sean Maher (Queensland University of Technology), Robert Schweitzer (Queensland University of Technology), Carolina Saccaggi (University of Southern Queensland)

Thesis title:

The Myth of Celebrity

Description:

The Myth of Celebrity is a creative practice research project that undertakes a detailed analysis of American singer Katy Perry and exhibits the findings in a short documentary script. Using an interdisciplinary approach from creative industries and psychology, the research uses Perry as a sample case study to address issues of persona underpinning celebrity identity and the duality that occurs in the celebrity's public presentation to society. The research explores issues of authenticity or inauthenticity within celebrity culture.

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Country: Australia

Supervisor/s: Victoria Garnons-Williams (Queensland University of Technology), Leah King-Smith (Queensland University of Technology)

Thesis title:

Lines in The Sand: North Stradbroke Island Festivals 2011-2014: Chronicling a Curatorial Philosophy in Response to Ecology of Change

Description:

Themes of mining, development and human impact on the environment involve issues facing much of the planet. This intensely local research study is a creative response to political, cultural, and environmental change in the Quandamooka. It outlines a template for curating ecological art which provides a detailed explanation of the nine principles that helped shape a series of island festival events and exhibitions, and in turn relationships, that connect the writer to the people, place and ecology of the Quandamooka. The outcomes speak to a much greater narrative about the restoration and rejuvenation of the land both ecologically and spiritually.

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Country: Australia

Supervisor/s: Craig Bolland (Queensland University of Technology), Rohan Wilson (Queensland University of Technology)

Thesis title:

Down in the River: Marcia's Identity Status Paradigm in the Cult Novel

Description:

Thesis information is under embargo until 12 December 2024.

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Supervisor/s: Rachel Mathews (Queensland University of Technology), Csaba Buday (Queensland University of Technology)

Thesis title:

Choreographic Strategies to Achieve Visual Communication within an Original Film Narrative through Academic Ballet Choreography

Description:

This research explored the use of ballet in cinema narrative - specifically its efficacy as a source of visual communication once removed from the stereotypical characterizations, plotlines and cinematic tropes that have become associated with cinematic ballet. To test this efficacy, the project involved the production and choreography of an original featurette film, Nearly Not Me, followed by an audience survey for the collection of qualitative data. The findings identify eight choreographic strategies for the successful use of academic ballet choreography as a means of visual communication in film, inspiring other choreographers to challenge existing traditions to evolve.

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Supervisor/s: Jared Donovan (Queensland University of Technology), Clinton Fookes (Queensland University of Technology)

Thesis title:

Artistic Approaches to Machine Learning

Description:

This research is about how Artificial Intelligence and Machine Learning may impact creative practice. The thesis looks at various implementations and models related to the subject from different cultural and technical viewpoints. The project also provides experimental creative outcomes from my personal practice along with a qualitative study into attitudes and perspectives from other creative practitioners.

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Country: Australia

Supervisor/s: Jennifer Seevinck (Queensland University of Technology), Manuela Taboada (Queensland University of Technology), Tomasz Bednarz (Queensland University of Technology)

Thesis title:

From Analogue to Digital: Drawing The Human Form by Examining Creative Practices, Techniques and Experiences of Practitioners Within Immersive Technology

Description:

Advancements in virtual reality (VR) have facilitated a new drawing experience for digital artists. These have provided the experience for artists to have an embodied human-computer interaction (HCI) while drawing. This project focuses on exploring and understanding how analogue life drawing practices can be redefined in the digital realm of virtual reality. In this practice-led project, the analogue life drawing creative practice is the foundation for making immersive drawing artworks in the virtual environment. This is alongside theoretical research into aesthetic experience, embodiment, disembodiment and presence in conjunction with conducting semi-structured interviews to understand other drawing practitioner experiences with immersive drawing.

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Country: Egypt

Supervisor/s: Veronica Garcia Hansen (Queensland University of Technology), Mohammed Elhenawy (Queensland University of Technology), Robin Drogemuller (Queensland University of Technology), Gillian Isoardi (Private Individual)

Thesis title:

Predicting Glare in Open-Plan Offices Using Simplified Data Acquisitions and Machine Learning Algorithms

Description:

Glare in open-plan offices can negatively affect the productivity and well-being of office workers. Accurate glare prediction is challenging, as occupants' sensitivity to glare may differ under the same conditions. Developed as part of an ARC Linkage Project, this thesis challenges the limitations prevalent in current glare metrics by delivering a new model of predicting glare for open-plan offices. By utilising machine learning (ML) techniques, more accurate tools and methods are unlocked to assist architects and lighting engineers in the early stages of the design process. They ultimately enable more efficient daylight office designs with reduced glare discomfort in Australia.

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Country: China

Supervisor/s: Oksana Zelenko (Queensland University of Technology), Elinor Buys (Queensland University of Technology)

Thesis title:

Exploring Contemporary Visualisations of Traditional Chinese Symbols: A Case of Tea Branding Design

Description:

This thesis was completed by creative practice and investigates design processes and principles that could support the complex process of translation of traditional Chinese symbols into a contemporary design setting, in the context of tea packaging design. The study involved reflective practice, content analysis of tea packaging design, semi-structured interviews with professional designers, and the creation of fifteen original artworks, exhibited publicly in 2019. A key outcome of the study is a set of design processes, guides and principles for designers and researchers working with Chinese symbolism in Asian and non-Asian contexts.

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Supervisor/s: Mark Pennings (Queensland University of Technology), Leah King-Smith (Queensland University of Technology)

Thesis title:

Cloud methodology: objects, topology and practice

Description:

This practice-led research investigates how non-human agencies contribute to the art-making process. Using an object-oriented and material-semiotic approach, I propose that the reciprocity between objects and processes that occurs in art practice can be understood as a topological cloud: a self-generating hyperobject. This proposition is informed by the ideas of Graham Harman, Timothy Morton, and Hubert Damisch, and contextualised by contemporary artists Bruce Nauman (US), Didier Vermeiren (Belgium) and Gabriel Orozco (Mexico). It is my contention that this methodological model provides a useful way of understanding art practice as a network of object-based structures, while preserving its alien, emergent qualities.

Introduction

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Country: Australia

Supervisor/s: Victoria Garnons-Williams (Queensland University of Technology), Oksana Zelenko (Queensland University of Technology)

Thesis title:

Balancing the Binary: Ambivalent Entanglement and Digital Isolation in Creative Capacity for Contemporary Photomedia Artists

Description:

This thesis is an examination into contemporary art photography and how digital isolation and digital entanglements interact and impact the creative process. It contains interviews with contemporary photographers from Australia and from the international community, and includes new bodies of works of my own creative photography. This research helps to understand the way photographic artists critique and use digital technology, and how they actively mitigate disruptive entanglements.

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Supervisor/s: Keith Armstrong (Queensland University of Technology), Evonne Miller (Queensland University of Technology), Anita Venter (University of the Free State)

Thesis title:

Strong Houses, Strong Voices: Sharing the Lived Experiences of Post-Natural Builders in South Africa

Description:

This project explores and shares the stories of post-natural builders in South Africa who use re-purposed waste materials and natural materials to build 'shack-replacement' houses and community structures. The project supported the builders with advocacy tools and generated a model for creative collaboration suited for supporting empowering community engagement in other contexts. The project's video narratives and multi-media artworks share stories of how the post-natural building practice connects builders to cultural identities associated with traditional architecture, builds local capacities through training and community activity, and provides inexpensive, climate-appropriate shelter.

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Country: Australia

Supervisor/s: Mark Pennings (Queensland University of Technology), Sorin Oancea (Queensland University of Technology)

Thesis title:

Mapping the Techno-stice: Dissensual Territories. In-between Technology and Contemporary Art

Description:

This practice-led project explores the political potential of dissensus. The artworks created through this research utilise the overlooked possibilities of hybrid digital forms of Machinima. The framing of this research demanded a new term, techno-stice - a synthesis of technology and a 'social interstice', to understand the role of politics, digital media and agency in the creation of contemporary art.

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Daniel Pratt

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Country: Australia

Supervisor/s: Gavin Carfoot (Queensland University of Technology), Kristina Kelman (Queensland University of Technology), Philip Graham (University of Queensland)

Thesis title:

Sensemaking in the Recording Environment: Understanding the Role of the Record Producer

Description:

This thesis explores how the record producer participates in the recording studio as a member of a sensemaking team. It examines a variety of recording scenarios from traditional recording studios, to online transnational recording systems, as well as mobile location recordings in Chennai India. This variety of recording settings allowed Dr Pratt to develop a better understanding of how small creative groups negotiate complicated decisions and produce finished recorded work. This study helps new record producers understand the organisational communication skills required to work in the recording industry. It also offers a unique setting for sensemaking research in the field of organisational communication.

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Country: Australia

Supervisor/s: Sandra Gattenhof (Queensland University of Technology), Verena Thomas (Queensland University of Technology)

Thesis title:

Embodied Futures: Weaving Futures Thinking, Applied Theatre and Community Development in Creative and Participatory Embodied Practice

Description:

This practice-led research both bridges, and offers an extension to, the fields of Applied Theatre, Participatory Community Development and Futures Thinking. Through a series of practical workshops, conducted in Australia and Timor-Leste, the study explored what a structurally transformed world might practically be like. Themes discussed in the reflection on practice include: patterns of time and macrohistories; distancing through role and metaphor; and re-contemplating ancestors? influence on people's worldviews. Outputs from the project include an Illustrated Exercises Book and the Embodied Futures Framework for stepping through stages of change to help groups understand what transforms tomorrow.

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Country: Iran

Supervisor/s: Axel Bruns (Queensland University of Technology), Brenda Moon (Queensland University of Technology), Peta Mitchell (Queensland University of Technology)

Thesis title:

Networked Discursive Alliances: Antagonism, Agonism, and the Dynamics of Discursive Struggles in the Australian Twittersphere

Description:

This project examines the complex inter-relationship between social media and democracy, by investigating the dynamics of economic, social, and political disagreements and struggles among Twitter users in Australia. The thesis looks for ways to transform polarisation and disagreements into conflictual togetherness.

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Supervisor/s: Glenda Caldwell (Queensland University of Technology), Lindy-Lou Burton (Queensland University of Technology), Mirko Guaralda (Queensland University of Technology)

Thesis title:

From Product to Process and Site to System: Disaster Resilience and Humanitarian Design in Architecture Education

Description:

This research explores humanitarianism and disaster resilient design within architecture education through the practice of transformative pedagogy. Through emancipatory action research, a concept-based curriculum was developed, implemented and evaluated. This study challenges traditional structures of architectural design studios, proposing a designed and tested alternative studio model for transformative learning. The research found that - to address complex global problems faced by 21st Century learners - architecture education must embrace transdisciplinary, collaborative design methods. This points to the future of built environment design, which can expand from a product-oriented paradigm to address processes inherent in complex systems-scale problems.

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Country: Iran

Supervisor/s: Vesna Popovic (Queensland University of Technology), Mery Thompson (Queensland University of Technology), Rafael Gomez (Queensland University of Technology)

Thesis title:

The Relationships Between Cultural Values and Product Emotional Attachment

Description:

This research aims to provide a better understanding about the relationship between a user's cultural values and the emotional attachment they develop with products through a cross-cultural study on Australian and Iranian cultures. This research undertook two studies employing a mixed method approach comprising a quantitative study in the form of a survey and a qualitative study through in-depth semi-structured interviews. The outcomes were consolidated and analysed to inform the development of a framework to assist designers to increase sustainability by improving product attachment through encompassing a user's cultural attributes in their designs.

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Country: Australia

Supervisor/s: Stuart Cunningham (Queensland University of Technology), John Banks (Queensland University of Technology)

Thesis title:

Fast and Furious Film-Making: Emerging Hybrid Online-TV Production Practices in Australia

Description:

This study reveals distinctive new forms of screen industry convergence with deep implications for creators themselves and the screen industry in general. It is the first longitudinal study of veteran YouTubers and established TV producers making highly popular serial narrative web-series together, and it shows the professional outcomes from this rapprochement. Fourteen teams from the Google/Screen Australia initiative Skip Ahead and three teams of professional writer-producers were tracked as they launched web-series on YouTube. This study showed the majority of teams parlayed highly viewed web-series into license deals with digital broadcasters and online streamers, and thus potentially sustainable careers.

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Country: Romania

Supervisor/s: Marcus Foth (Queensland University of Technology), Markus Rittenbruch (Queensland University of Technology), Ronald Schroeter (Queensland University of Technology)

Thesis title:

Humanising the Smart City: Co-Creation Redefined in Pursuit of Systemic Change

Description:

This study explores the practices and tensions between urban actors in the production of the smart city, as well as mechanisms towards more pluralistic and participatory approaches. Combining action research with case studies and expert interviews, the researcher collaborated with public servants, community members, academics, and small business owners to present a more nuanced account of their relationship, aspirations and challenges. This project reformulates the concepts of participatory citymaking and co-creation to assist collaborative and alternative responses to contemporary urban challenges.

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Country: Australia

Supervisor/s: Charles Dacosta (Queensland University of Technology), Christopher Carter (Queensland University of Technology)

Thesis title:

Immersive Performance Environment: A Framework for Facilitating an Actor in Virtual Production

Description:

Virtual Production is a relatively new concept that covers a broad selection of production approaches focused on combining physical and virtual content together in real-time. However, Virtual Production currently has perceptual limitations that impact on an actor's understanding of the virtual environment during a performance. This study explored various approaches to address this limited perceptual experience by minimising an actor's responsibility for the systems found in Virtual Production. The findings of the study led to the creation of a conceptual framework that can be used to facilitate an actor's perceptual experience of a virtual environment during a performance.

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Supervisor/s: Jean Burgess (Queensland University of Technology), Peta Mitchell (Queensland University of Technology), Terrell Thomson (Queensland University of Technology), Timothy Highfield (University of Sheffield)

Thesis title:

Digitally Mediated Martyrdom: The Visual Politics of Posthumous Images in the Popular Struggle for Social Justice

Description:

This thesis introduced a new way of studying how visual social media is used to protest unjust deaths, especially those caused by police brutality and other forms of state violence. It developed the concept of 'digitally mediated martyrdom' to describe the communication practices that emerge through the online circulation of posthumous digital images of victims. It applied this concept to the murder of Khaled Said in Egypt in 2010, and to the murder of Trayvon Martin in America in 2012. It used digital ethnography methods to explore the role that visual social media play in political discourse and protest mobilisations. The thesis found that the figure of the unintentional martyr is increasingly being deployed in social justice movements to give visibility to human rights abuses and to demand radical change.

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Country: Australia

Supervisor/s: Lesley Hawkes (Queensland University of Technology), Kari Gislason (Queensland University of Technology)

Thesis title:

Belonging at the End of the World: (Re)imagining Paradise through Narratives of Low-income Locals on the Gold Coast

Description:

This thesis includes a story collection and an exegesis that complicate ideas that the Gold Coast is simply a holidayworld with a criminal underbelly. Cultural texts imbue the Gold Coast with an otherworldly aura-one that mythologises the city as jointly being paradise and paradise lost. Low-income and disenfranchised locals simultaneously embody a sense of alienation and belonging in their lived experience of the Gold Coast. Their anxieties become projected onto the sea and the sky, where memories of invasion and evidence of climate change amplify their internal struggles.

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Country: Australia

Supervisor/s: Christy Collis (Queensland University of Technology), Stephen Harrington (Queensland University of Technology), Mirko Guaralda (Queensland University of Technology)

Thesis title:

What Do Audiences Want from a Virtual Reality Entertainment Experience?

Description:

This thesis examines Virtual Reality (VR) as a domain in conjunction with entertainment and user experience in order to create a new understanding of VR entertainment and a new narrative form-VR Entertainment Narrative.

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Country: Iran

Supervisor/s: Marianella Chamorro-Koc (Queensland University of Technology), Paul Sanders (Queensland University of Technology)

Thesis title:

Evaluating the Impact of Neighborhood Attributes on Residents' Place Attachment

Description:

In the era of rapid technological advances, there is a concern that people suffer from a sense of placelessness within their neighbourhoods. Place attachment, the residents' meaningful bonds, to their living place, results from its environmental, socio-cultural and economic make-up. Thus, this study aims to investigate the different range of neighbourhood characteristics that affect the development of residents' connection to their neighbourhoods. The study contributes to the theoretical, methodological and practical application of research in this field, the outcome of which can be of use in the planning and designing of new housing patterns and urban development issues.

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Country: Australia

Supervisor/s: Philip Crowther (Queensland University of Technology), Lindy-Lou Burton (Queensland University of Technology)

Thesis title:

A Model for Contemporary Learning of Architectural Design in Australia

Description:

This research identifies essential knowledge for effective learning and teaching of subject-situated architectural design in Australia. It has resulted in a learning and teaching model called the 'Model for contemporary learning of architectural design in Australia' that illustrates the contemporary shift in the signature studio pedagogy. The model informs the basis on how students, tutors and unit coordinators perceive their roles to interact with each other in face to face design lectures and design studio tutorials for effective design learning by students. This model is applicable in the four studio pedagogy models prevalent in Australasian schools of architecture.

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Country: South Africa

Supervisor/s: Keith Armstrong (Queensland University of Technology), Sarah Holland-Batt (Queensland University of Technology), Annel Pieterse (University of the Western Cape)

Thesis title:

Sounding relations to grond and water: responding to social-ecological change through spoken word poetry

Description:

This thesis explores South Africans' relations to grond (land/soil) and water through two collaborative spoken word poetry projects. By investigating how collaborative poetic practices can be improved to respond to social-ecological changes, this study generates critical new knowledge for other poetry collectives to apply to their own practices. The principal methodology is practice-led and is focused by two projects: the first, themed around relations to grond that took place in Mangaung in early 2019, and the principal project, themed around relations to water, culminating in the production of 'What the Water Remembers' in Cape Town on 4 September 2019.

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Supervisor/s: Stephen Harrington (Queensland University of Technology), Axel Bruns (Queensland University of Technology), Folker Hanusch (Queensland University of Technology)

Thesis title:

The Metrification of Legacy News: An Analysis of the Attitudes and Practices at Three Australian Outlets

Description:

This thesis examines the impact of web and social media analytics on news content production in three Australian legacy outlets (ABC News, The Sydney Morning Herald and The Australian). It proposes the idea of 'identity news' under an evolving quantification ethos in newsrooms shaped by the institutionalisation of news metrification practices. Identity news refers to the process of selection, design, crafting and news distribution according to the multiple demographics and inferred identities revealed by two basic measurement approaches in the field (the platform engagement regime on social media and the retention regime in websites).

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Country: Russian Federation

Supervisor/s: Clive Bean (Queensland University of Technology), Angela Romano (Queensland University of Technology)

Thesis title:

Digital Media as a Tool for Non-Systemic Opposition in Russia: A Case Study of Alexey Navalny's Populist Communications on YouTube

Description:

This thesis looks at the digital communication strategies of outsiders of Russian politics opposed to the current political elite. This research contributes a case study of Russia's popular opposition leader Alexey Navalny to the vibrant research fields of populism, investigative journalism, and digital media. The study concludes that the combination of investigative journalism and digital activism practices embedded in the populist style of communication on YouTube contributes to the survival of Russian opposition in the public sphere.

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Country: Australia

Supervisor/s: Caroline Heim (Queensland University of Technology), Sandra Gattenhof (Queensland University of Technology)

Thesis title:

The Mathematics of Longing: Exploring the Interface between Science and Theatre by Translating Mathematical Theorems into a Play Script.

Description:

This PhD investigated how a playwright could translate what is elemental and elegant about a series of disparate mathematical equations into a play script such that the translations were expressed as an overall unified narrative that makes an overarching comment about science and humanity. By combining cultural translation and ekphrasis, a new methodology model was created for writing my PhD play entitled The Mathematics of Longing. Furthermore, the play script was presented in a non-traditional publishing format that visually invokes the subtext of the play, and potentially influences future production mis en scenes of the play text.

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Supervisor/s: Elija Cassidy (Queensland University of Technology), Peta Mitchell (Queensland University of Technology)

Thesis title:

Dating, Digital Media, and Diaspora: Contextualising the Cultural Uses of Tinder and Tantan Among Australian Chinese Diasporas

Description:

This thesis examines how Australian Chinese communities engage with dating apps Tinder and Tantan. With digital ethnographic approaches, it investigates the experiences of 23 interview participants - mainly young first-generation migrants from mainland China - on Tinder and Tantan in Australia. In doing so, it generates empirical evidences for research focusing on dating apps and dating practices among young Chinese people living in Australia. It deepens our understandings of how ethnic, sexual, and gender-related dynamics afforded by digital technologies intersect with Chinese identity negotiations.

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Country: Australia

Supervisor/s: Kevin Sanson (Queensland University of Technology), Andrew Moritz (Transport Heritage NSW), Mark Ryan (Queensland University of Technology)

Thesis title:

Blockbusting Australian Style: Evolution of the Blockbuster Exhibition in Australian Museums

Description:

This research critically evaluates the development of the blockbuster exhibition within an Australian museum context. Drawing on semi-structured interviews, reflective practice, and critical historiography, this research argues that current iterations of the blockbuster genre have given rise to a new ecology of 'attractor' exhibitions that are fundamental to visitor engagement strategies in the 21st century Australian museum. These findings are then operationalised in a practical field guide for the implementation of blockbuster exhibitions, providing new knowledge for the Australian museum practitioner to employ in contemporary industry practice.

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Supervisor/s: Muge Fialho Leandro Alves Teixeira
(Queensland University of Technology), Paul Sanders
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Thesis title:

Curating Place: Public Art and City Identity

Description:

This Thesis investigates the impact and influence of the public art-curator to engender place-identity. It focuses on the connected relationship between curating, public art, and place identity to develop a contemporary understanding of the challenges, drivers, players and intersections that determine spatial and custodial narratives. Through the theories of placemaking and brand marketing and the review of the art and cultural policies of New York, Singapore, and Qatar, it draws upon the practice in curating public art.

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Country: Australia

Supervisor/s: Christy Collis (Queensland University of Technology), Joseph Carter (Queensland University of Technology), Peter Threlfall (TPD Media)

Thesis title:

Can a Reality Program Be Produced That Illustrates a Social Issue as Well as Having the Characteristics of Successful Entertainment?

Description:

This research examines how reality television can be used to highlight the social issue of homelessness while fulfilling the needs of stakeholders. The research illustrates the perspectives of homeless persons, advocates and television executives and offers a program format solution to satisfy the requirements for a television program that is entertaining and enlightening for the viewer. The research will assist television producers who seek to broaden the appeal of social issue programs in commercial environments.

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Country: Australia

Supervisor/s: Lindy-Lou Burton (Queensland University of Technology), Paul Sanders (Deakin University), Veronica Garcia Hansen (Queensland University of Technology)

Thesis title:

Construction Flexibility and Adaptability inside Hospitals

Description:

Construction flexibility inside a hospital building serves as an enabler for a health service to clinically progress. This research sought the opportunity of extending flexible design approaches by consolidating established knowledge into a refreshed flexibility pattern mapping. The resulting understanding provided a base for developing design propositions as examples of apt, flexible solutions. This research contributed to guiding flexibility towards enhanced practices and it partially addressed the softening of the logarithmic growth of financial burden for health services. Also, the research provided a model for a change-ready building fabric, allowing responsive opportunity towards the accelerating pace of clinical development.

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Country: Australia

Supervisor/s: Patrik Wikstrom (Queensland University of Technology), Nicolas Suzor (Queensland University of Technology), Daniel Padua (Queensland University of Technology), Stuart Watters (Private Individual)

Thesis title:

Transparency, Technology and Trust: Music Metrics and Cultural Distortion

Description:

Transparency issues influence many aspects of modern society and are critical in balancing the dichotomy between personalisation and privacy. Transparency behaviours have previously been refined into the disclosure, clarity and accuracy (DCA) model (Schnackenberg & Tomlinson, 2014). This thesis has two projects. Project 1 makes a significant contribution to the research literature on transparency and music industry practices by testing the DCA model. Project 2 presents an investigation into music licensing, missing revenue and technology transfer in Australia. The findings suggest an accreditation system for copyright throughput accuracy could function as a potential roadmap for transparency innovation more broadly.

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Supervisor/s: Donna Hancox (Queensland University of Technology), Kelli McGraw (Queensland University of Technology), Linda Campbell (Mental Notes Consulting), Samantha Harrington Mcfeeter (Queensland University of Technology)

Thesis title:

Let's Talk about Public Speaking Anxiety: Supporting and Scaffolding Sustainable Speaking Practices While at University and Beyond

Description:

Public Speaking Anxiety (PSA) is an enduring challenge in education and employment. This professional doctorate investigated PSA in higher education via two connected projects. Project 1 utilised an instrumental case study to explore how PSA was recognised and experienced in an undergraduate university oral communication unit. Applying critical reflective practice, this study concluded that PSA is complex, prevalent, individual and unstable. Leveraging this understanding, Project 2 presents a new support framework and offers practical guidance for both educators and students. This framework promotes self-regulation, self-efficacy and self-reflection to develop sustainable speaking practices while at university and beyond.

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Supervisor/s: Mark Radvan (Queensland University of Technology), Kathryn Kelly (Queensland University of Technology)

Thesis title:

I See You Seeing Me - An Analysis of the Relationship between Invitation and Participation in Theatre for Early Years

Description:

This project investigated the work involved in structuring and presenting dance-theatre as a responsive encounter between professional performers and audiences aged three years and younger, in the company of their adults. The research analysed the structure of the performance work, the work of the performers and the observable actions of young children as co-creative participants. Young children's participation in live performance encompasses a spectrum of aesthetically intentional responses, with the potential to be a critical aspect of the materials of construction of each show, when harnessed by the performers within the framework of performer responsivity proffered by the research.

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Supervisor/s: Michael Whelan (Queensland University of Technology), Terence Willstead (Queensland University of Technology), David Minear (Bombora), Philip Graham (University of Queensland)

Thesis title:

Surf, Sun, and Sound: The Role of Surf Music in the Development of Australian Popular Culture. An Investigation of the Iconic Surf Film, Morning of The Earth, as a Medium

Description:

A new model for examining iconic works in creative popular culture was developed, generating comparative insights into how the iconic film Morning Of The Earth (1972) functions as a medium, first by re-recording the original soundtrack using emerging local talent, then by asking the same artists to re-imagine the soundtrack and compose new material for the film. Informed by historical connection to the original film, artistic direction of these projects enabled exploration of how Morning Of The Earth's influence inspired these artists' reworking and responding to the original soundtrack by comparing the film's overall position in Australian popular culture.

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Supervisor/s: Deborah Henderson (Queensland University of Technology), Donna Tangen (Queensland University of Technology)

Thesis title:

An Eye-Opening Experience: Building Secondary Students' Intercultural Understanding and Empathetic, Active Citizenship Through a Humanitarian Trip to Vietnam.

Description:

This qualitative study explored the effects of a humanitarian-focused trip to Vietnam in 2017 on secondary students from a Queensland independent school investigating how this form of learning was transformative. Qualitative data obtained allowed the researcher-participant to record and observe this change with the application of thematic codes aligned inductively to distinct themes within the data. Hammer's (2011, 2012) Intercultural Development Continuum provided the conceptual framework for this study. This research contributes to understanding the value of Australian secondary school students' intercultural encounters in an Asian country, with the findings indicating a development of intercultural understanding, active citizenship and empathy.

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Supervisor/s: Terry Lyons (Queensland University of Technology), Andy Yeh (Queensland University of Technology)

Thesis title:

High School Students' Perceptions about the Helpfulness of PhET Simulations for Learning Physics

Description:

This research investigated Year 10 to 12 students' perceptions about the helpfulness of 18 interactive PhET simulations for learning physics. A quantitative survey followed by qualitative interviews were conducted to examine students' perceptions of why and how PhET simulations assisted them in terms of visualising abstract physics concepts and connecting mathematical understanding to physics concepts. Overall, the students found the PhET simulations to be very helpful for both aspects of their learning, particularly for visualisation. The study summarised students' descriptions of why they found the simulations helpful into nine enablers. Six recommendations are made for educators and simulation designers.

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Supervisor/s: Jillian Willis (Queensland University of Technology), Linda Graham (Queensland University of Technology)

Thesis title:

Ghosts in the Classroom: Passive Disengagement and Its Implications for Teachers

Description:

Students who frequently passively disengage from classroom learning typically go unnoticed by their teachers. Disengagement has implications for a student's inclusion, lifelong learning and wellbeing. This thesis investigated students' experiences of passive disengagement by using a visual methodology called the School Engagement Photo Technique (SEPT) and interviews with students. Students identified passive disengagement as a fluid and familiar experience in the classroom. The study also found that teacher-student relationships and teacher pedagogy were significant contributors to student (dis)engagement. Implications for teachers are discussed.

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Supervisor/s: Elizabeth Saggars (Queensland University of Technology), Julie Dillon-Wallace (Queensland University of Technology)

Thesis title:

Whole School Approach to Language Immersion Using Augmentative and Alternative Communication for Students with Multiple Disabilities and Complex Communication Needs

Description:

This study explored the features, strategies and challenges of a whole school approach to augmentative and alternative communication (AAC) for students with multiple disabilities and complex communication needs. Augmentative and alternative communication provides students with functional communication, enabling participation in their daily lives, and engagement with curriculum and learning. The study found that provision of AAC is dependent on staff skill, expert training, communication opportunities and access to AAC resources. Furthermore, the features of a whole school AAC approach were underpinned by attitude, personal philosophy, organisational culture and the belief that all students can communicate and have something to say.

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Thesis title:

A Case Study of Policy Enactment: Examining a Homestay Program for Indigenous Students in a Catholic All-Boys Secondary School

Description:

This study investigated a homestay program for Indigenous students from remote communities at a Catholic all-boys secondary school in metropolitan Queensland. The policy enactment research explored how the program was enacted as a response to broader Reconciliation and Closing the Gap goals. The research design involved a case study of an Edmund Rice Education Australia (EREA) school including site analysis, document analysis, and interviews. The study revealed the homestay program as a local instance of reconciliation policy created tensions and anxieties in achieving objectives. Historical, symbolic and educational questions were a repeated theme, highlighting the significant challenges of reconciliation-in-action.

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Supervisor/s: Lyndal O’Gorman (Queensland University of Technology), Annette Woods (Queensland University of Technology)

Thesis title:

Playing in Prep? A Queensland Principal’s Account of the Role of Play in Children’s Classroom Learning

Description:

This qualitative narrative inquiry examined the account of a principal’s perceptions over time, regarding the role of play in Queensland’s Preparatory Year. The study was conducted from an insider-researcher perspective and set within the framework of three-dimensional narrative space. The participant’s views of play were found to relate to her evolving epistemological constructions of play pedagogies and were influenced by Growth Mindset Theory. This research explored the participant’s perspectives about how her developing professional knowledge translated to both leadership of teaching staff and advocacy for retaining approaches inclusive of play, as counter-influences to schoolification in a context of educational reform.

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Supervisor/s: Kate Williams (Queensland University of Technology), Susan Walker (Queensland University of Technology)

Thesis title:

The Relationship Between Secondary Students' Writing Self-efficacy and Writing Achievement

Description:

This study explored the relationship between secondary school students' writing self-efficacy and writing achievement and the factors that influence this relationship. A mixed methods approach included a writing self-efficacy survey with 62 Year 7 and Year 9 students, and their 2018 writing scores on a national standardised test (NAPLAN). A subset of six students was then interviewed to explore the student-perceived influencing factors associated with writing self-efficacy. The findings show that self-efficacy and writing achievement are weakly correlated. In addition, the qualitative data revealed eight themes that are likely to influence the writing process and writing achievement. These include emotion, self-perception, parent and teacher influence, student strategies, writing genre, writing comprehension, and writing achievement.

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Supervisor/s: Annette Woods (Queensland University of Technology), Grace Sarra (Queensland University of Technology), Marnee Shay (Queensland University of Technology)

Thesis title:

Torres Strait Islander Students' Experiences Transitioning From Various Locations to Brisbane to Undertake University Studies

Description:

This research project was undertaken to ascertain what Torres Strait Islander students, who have relocated from various locations around Australia to Brisbane in order to attend university, report as having assisted them in their transition to a metropolitan area to undertake their university studies or suggest would have assisted them. The findings of this research contribute to knowledge about how current and future Torres Strait Islander students can be better supported to transition to university and improve their chances of success whilst at university.

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Supervisor/s: Lyndal O’Gorman (Queensland University of Technology), Amanda Mcfadden (Queensland University of Technology)

Thesis title:

Children’s Perspectives on Creativity and Its Role in Their Lives

Description:

Children’s perspectives on creativity are lacking in existing literature. This study explores children’s perspectives on creativity and the role it plays in their lives. Using new sociology of childhood as the theoretical framework and Lundy’s Model of Participation to guide the methodology, focus groups with children from Prep to Year Six were conducted. The children described what creativity is, how it is used by individuals and society, and how they use creativity to better understand themselves, their learning and their world. This thesis offers perspectives on how to encourage children’s creativity, with implications for children’s general learning and wellbeing.

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Supervisor/s: Marilyn Campbell (Queensland University of Technology), Rebecca English (Queensland University of Technology), Carly Lassig (Queensland University of Technology)

Thesis title:

Investigation of the Development of Creative Thinking and Adaptability Skills Through Process Drama Techniques in Junior Secondary School Students in Sri Lanka

Description:

This thesis has shown the importance of developing creative thinking and adaptability skills through a drama-based teaching approach in junior secondary school students in Sri Lanka. Findings will help teachers enable and encourage the development of creative thinking and adaptability skills in junior secondary school students, teaching them how to be open to new ideas and think outside the square through process drama techniques, enhancing 21st-century skills.

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Supervisor/s: Elizabeth Saggars (Queensland University of Technology), Suzanne Carrington (Queensland University of Technology)

Thesis title:

Implementing a Tele-Classroom Consultation Approach in Rural and Remote Settings to Support a Community of Practice for Teachers Supporting Young Children on the Autism Spectrum and with Complex Needs in Mainstream Settings

Description:

Many mainstream educators need support to gain the necessary knowledge and skills to meet the needs of students on the autism spectrum within inclusive settings. This thesis explored a multiple-case research design utilising a tele-classroom consultation approach as a form of professional development, to support communities of practice for mainstream educators supporting young children on autism spectrum in two rural Queensland schools.

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Country: Australia

Supervisor/s: Deborah Henderson (Queensland University of Technology), Mallihai Tambyah (Queensland University of Technology)

Thesis title:

The Potential for Political Literacy in the Australian Curriculum

Description:

This qualitative study investigates the potential for the development of political literacy through the Australian Curriculum subjects of History and Civics and Citizenship. It argues that political literacy is important in the context of the significant challenges facing liberal democracies. Taking a policy trajectory approach, the study analyses the views of curriculum formulators along with its state adaptors and teacher interpreters. Findings indicate acceptance of the importance of political literacy but limited potential for its development. Notably, data indicate the limited implementation of Civics and Citizenship and a disjunction between scholars and teachers over what constitutes political literacy education.

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Supervisor/s: Daniel Mallet (Queensland University of Technology), Denise Beutel (Queensland University of Technology), Hendrik Huijser (Queensland University of Technology)

Thesis title:

An Analysis of Learning Networks of STEM Undergraduate Students to Promote Active Learning

Description:

This thesis addresses educational design issues related to the value of networked learning practices and the understanding of learning activities within an ecological framework. It responds to the need to make it possible for first-year university students to become autonomous lifelong learners, capable of tackling complex problems. High-level goals of this kind require course, curriculum and learning environment redesign. Major contributions reveal how wide the gulf is between a number of aspects of existing practice and the intention to help students become autonomous learners, and how a well-theorised analysis of current learning arrangements can provide vital information for educational (re)design.

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Supervisor/s: Karen Dooley (Queensland University of Technology), Donna Tangen (Queensland University of Technology), Guanglun Mu (Queensland University of Technology)

Thesis title:

School-Family Relationships in Diverse Australia: A Sociological Case Study of the Connections between a School Community and Parents from an Afghan Refugee Background

Description:

This theory-led case study investigated how a Queensland primary school is engaging parents from an Afghan refugee background. Employing sociologist Pierre Bourdieu's comprehensive approach to researching social fields, this research draws from interviews with school staff and parents to explore how parent engagement was approached and perceived by the participants, and how it was influenced by external forces. This study sheds light on the complexities of forging effective school-family relationships in increasingly diverse societies. Amongst the study's contributions are a 4-pillared ethical approach to cross-cultural research and a new sociological template for equitable parent engagement in culturally diverse schools.

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Supervisor/s: Michael Dezuanni (Queensland University of Technology), Kelli McGraw (Queensland University of Technology)

Thesis title:

Teaching and Learning with Cloud Platforms in the Primary School Classroom

Description:

This research investigated teaching and learning with Chromebook computers and Google's G Suite for Education in a Queensland year 5 primary school classroom. The research used Actor Network Theory and Communities of Practice theory to explore the material aspects of using technologies in the classroom, and how cloud-based technologies promote collaborative learning. Analysis of classroom practice revealed the potential advantages of using cloud platforms in education, while analysis of technology policies from the Federal government level to the classroom revealed misalignments in expectation for students' learning. The findings inform recommendations for technology policy development, curriculum planning and teachers' pedagogical practices.

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Supervisor/s: Karen Dooley (Queensland University of Technology), Jillian Willis (Queensland University of Technology), Stacey Campbell (Queensland University of Technology)

Thesis title:

Secondary English Feedback: a Case Study of Contextual Influences on the Feedback Practices of Four Queensland Teachers

Description:

This study examined how teachers' feedback was shaped by their context including community and institutional cultures and their beliefs about students and how they learn. A novel method of analysis showed that the type of information in the feedback could be linked to various aspects of context. While generic models of feedback have been proposed, the study suggests that more attention to how teachers use feedback within different contexts will increase understanding of good feedback models and ultimately help teachers to use a repertoire of feedback strategies strategically.

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Supervisor/s: Jillian Willis (Queensland University of Technology), Joanne Lunn (Queensland University of Technology), Leanne Crosswell (Queensland University of Technology), Tania Broadley (Queensland University of Technology)

Thesis title:

Early Career Teachers' Experiences in the Pursuit of Quality

Description:

Early career teachers were asked to identify what impact policies for improving teacher quality had on their practice. Quality is hard to define, but can be understood by how it was talked about. In this qualitative study, 13 early career teachers from teacher education excellence programs in Queensland and Western Australia were interviewed. Discourse analysis, based on Archer's theory of reflexivity and Bernstein's concept of recontextualisation, highlighted that quality was recognised both individually and collectively, as being guided by relational knowledge of their students. A contribution of this study is an understanding of quality as a process of 'always becoming'.

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Supervisor/s: Lynette May (Queensland University of Technology), Guanglun Mu (Queensland University of Technology)

Thesis title:

Grammar and Vocabulary Testing in the Senior High School Entrance English Test in China: A Washback Study from a Learning Oriented Assessment Perspective

Description:

This project explored the positive and negative influence of a high-stakes standardised test of English as a Foreign Language on the teaching and learning of grammar and vocabulary in junior high schools in China through the lens of Learning Oriented Assessment. An exploratory sequential mixed methods research design was employed. Findings from classroom observations, teacher interviews, student focus groups, and a student survey showed complex washback results. The findings suggest that classroom interaction, involvement in assessment, feedback, and learner autonomy could play an important role in reconciling the inherent tension between summative assessment, teaching, and learning.

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Supervisor/s: Kerry Mallan (Queensland University of Technology), Susan Walker (Queensland University of Technology)

Thesis title:

Mind-Modelling in Picture Books: A Cognitive-Literary Approach

Description:

This research takes a cross-disciplinary approach to examining the mind-modelling representations in picture books for children. Working with Theory of Mind research, the thesis develops a novel model and typology to systematically analyse the mind-reading processes of characters and their constructions in the sample texts. The in-depth analyses of the words and images in nineteen picture books from Australia, the United States, the United Kingdom, South Africa and Taiwan offer insight into understanding characters' emotional and psychological states. This thesis contributes new knowledge on mind-modelling in picture books and offers guidelines for further research into classroom applications.

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Supervisor/s: Hitendra Pillay (Queensland University of Technology), Neal Dreamson (Queensland University of Technology)

Thesis title:

Impact of Digital Game-Based Learning to Support Students? Cognitive Skills Development for English Language Learning in Vietnam

Description:

This research examined how EFL students may enhance their EFL learning by developing cognitive skills through digital game-based learning in a Vietnamese higher education context. The research adopted a qualitative approach involving a cognitive task analysis approach with a pre- and post-test design. The findings indicated that the adoption of digital game-based learning in EFL learning might have had a positive impact on the participants' cognitive skills development and learning outcomes. The findings of this study contribute to further understanding of the interrelationship between digital game-based learning and cognitive skills in enhancing teaching and learning in the EFL discipline.

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Supervisor/s: Christina Chalmers (Queensland University of Technology), Terry Lyons (Queensland University of Technology)

Thesis title:

The Professional Identity Development of University Students in a STEM Outreach Program

Description:

This thesis investigated the professional identity development of university student ambassadors in an extra-curricular STEM outreach program. It further explored learning outcomes in the form of graduate attributes enhanced through the program. In addition to knowledge and skill development, the program facilitated student professional identity formation through building of self-image and confidence in capabilities, and affirmation and reevaluation of career pathways. This research provides new perspectives on enablers for learning and professional identity development that resulted from the on-the-job training and feedback from peers that occurred in the supportive 'safe space' of the outreach program.

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Supervisor/s: Lynette May (Queensland University of Technology), Jennifer Alford (Queensland University of Technology)

Thesis title:

Exploring Teacher Agency Through English Language School-Based Assessment: A Case Study in an Indonesian Primary School

Description:

This qualitative instrumental case study analyzed the manifestations of teacher agency through one complete cycle of a School-Based Assessment (SBA) practice of English in a primary school in Indonesia. Through an ecological approach, this study indicates that agency is influenced by teachers' past experiences, perspectives and beliefs, and the school's cultural, structural, and material conditions; some of which are enabling and constraining teacher agency. A problematic relationship between agency and sound language assessment in terms of validity, reliability and fairness was revealed. Actions to be taken by national policy makers, the school, the SBA practitioners, and teacher educators are recommended.

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Thesis title:

Evaluation of Emergency Medicine Pharmacist Review and its Impact on Hospital Length of Stay of Older Medical Patients

Description:

This research evaluated the contribution of pharmacists in the emergency department and found that over 80% of pharmacist recommendations to initiate, cease, withhold, or change medication doses were adopted by emergency clinicians. While this retrospective study found no statistically significant difference in length of stay between older persons reviewed by the pharmacist and those who were not, exploration of staff perceptions highlighted the high value clinicians place on pharmacist review of patients presenting to the emergency department.

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Supervisor/s: Andrew Hunt (Queensland University of Technology), Ian Stewart (Queensland University of Technology)

Thesis title:

Repeated Exercise in Heat and Exertional Alterations to Thermoregulation (REHEAT)

Description:

This thesis is an investigation into the effects of repeated bouts of exercise and rest on core temperature responses between men and women, following current Australian Army work guidelines. The findings of this thesis suggest that the current guidelines appropriately protect both men and women working in the heat and may inform Australian Army decision making regarding appropriate durations for up to four repeated bouts of work and rest when working in extreme heat.

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Thesis title:

The Capacity of Health Services Researchers to Engage with Research Impact

Description:

Demonstrating research impact in terms of social and economic benefits is a relatively new notion for many researchers but is of increasing importance in the research landscape. This thesis explored some of the relevant questions and practicalities which arise when considering the demonstration of research impact, such as researchers' perceived capability to understand research impact, to demonstrate research impact, and to engage with the end-users of research. This research builds the research impact literature in the Australian setting and provides insights into what practical training researchers may find of value.

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Thesis title:

Neurogenesis and Neuroplasticity Following Olfactory Fear Conditioning

Description:

This dissertation focused on determining the neurocircuitry of olfactory fear conditioning in order to further understand the microanatomy of post-traumatic stress disorder and contribute towards the refinement of therapeutic innovations. The study determined that different subnuclei of the amygdala were involved in olfactory fear memory and that recollection of such memories enhanced neuroplasticity and increased the number of new born neurons and astrocytes in the brain regions associated with olfaction and memory processing. This study concluded that following olfactory fear conditioning, newborn neurons may undergo long term potentiation, which may support their survival up to 14 days after birth.

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Supervisor/s: Steven Mcphail (Queensland University of Technology), Monika Janda (Queensland University of Technology), Elizabeth Powell (University of Queensland)

Thesis title:

An Investigation of Ambulatory Tertiary Hospital Resource Utilisation by People with Liver Disease

Description:

This thesis described the casemix, health resource utilisation and geographic clustering of demand for health services for liver disease using data collected from the Princess Alexandra Hospital, Brisbane. High levels of advanced liver disease were seen, with a high requirement for ancillary services. Younger patients and patients with less severe disease were less likely to attend scheduled appointments. Demand for specialty care was clustered within specific geographic areas. The findings of this program of research highlight some specific issues that need to be addressed, in order to improve health services for patients with chronic liver disease.

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Supervisor/s: Nigar Khawaja (Queensland University of Technology), Brooke Andrew (Queensland University of Technology), Kerry Armstrong (Queensland University of Technology), Samir Al Adawi (Sultan Qaboos University)

Thesis title:

Understanding Family Caregiving For Individuals with Traumatic Brain Injury After A Road Traffic Crash In Oman

Description:

Caregiving of individuals with brain injury can be arduous. The present study explored the experiences and burden of caregivers in Oman. A combination of qualitative and quantitative methods were used to understand the process of caregiving in Oman. The findings highlighted the challenges and difficulties of the caregivers as well as their personal strengths and coping. Cultural beliefs and values, family and community support and religion appeared to help caregivers manage their burden. The study is the first of its kind in the region and has highlighted the impact of brain injury on the integrated family unit in Oman.

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Thesis title:

Delineating the Role of Hepatocyte Nuclear Factor 1 Beta (HNF1B) Transcript Variants in Prostate Cancer

Description:

Genome Wide Association Studies (GWAS) has identified HNF1B located at chromosome 17q12 as foremost risk gene for prostate cancer susceptibility in multi-ethnic populations. This thesis characterises the HNF1B transcript variants along with defining their expression pattern and functional attributes in prostate cancer. Future research will enable the discovery of the molecular mechanism of their actions and whether targeting these HNF1B transcript variants in cancer may prove a useful therapeutic strategy.

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Supervisor/s: Robert Mullins (Queensland University of Technology), Craig McNulty (Queensland University of Technology), Adam Scott (Queensland University of Technology), Robert Robergs (Queensland University of Technology)

Thesis title:

Retrospective Chart Review of Holter Monitoring and Exercise Stress Testing at Two Queensland Rural Hospitals

Description:

This thesis describes the process of service provision and evaluates the non-invasive cardiac diagnostics of exercise stress testing and Holter monitoring between two Queensland rural and remote health facilities. A multi-site retrospective chart review was conducted to document testing process and quantitatively evaluate the impact of facility location on key test parameters including time frames, proportions, and the travel implications related to distance and cost to patients living in non-metropolitan areas. Findings demonstrate that patients requiring these investigations travel significantly longer distances, with a high proportion exceeding recommended process and outcome time frames compared to documented standards.

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Supervisor/s: Ioni Lewis (Queensland University of Technology), Mary Sheehan (Queensland University of Technology)

Thesis title:

Cannabis and Driving: Background to Inform a Harm Reduction Approach

Description:

The thesis provides insights into cannabis and driving in Australia from the viewpoint of both users and health professionals. In particular, findings informed the feasibility of a Harm Reduction approach for cannabis and driving. Globally, attitudes towards recreational and medicinal use of cannabis are becoming increasingly tolerant. It is expected that the prevalence of cannabis use will rise, along with the associated harms such as drug driving. Harm Reduction is a policy which offers a non-judgemental approach to the issue. Key aspects of this approach include offering education and other resources to limit the resultant harm without aiming for eradication.

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Country: Australia

Supervisor/s: Lisa Nissen (Queensland University of Technology), Gregory Kyle (Queensland University of Technology), Andrew Hale (Queensland Health)

Thesis title:

An Evaluation of a Collaborative Doctor-Pharmacist Prescribing Model Compared to the Usual Medical Prescribing Model in the Emergency Department

Description:

This project was a comparative study to investigate whether a collaborative doctor-pharmacist prescribing model produces safer and more accurate prescribing outcomes than the usual medical model, in the Emergency Department at Redland Hospital, Queensland, Australia. This study was conducted as a randomised controlled trial comparing the control and intervention patient groups, aligning with the six dimensions of the National Health Performance Framework. This study has demonstrated that a collaborative doctor-pharmacist prescribing model produces a safer and more accurate medication chart than usual care, venous thromboembolism (VTE) risk assessment and prescribing improved and it demonstrated high patient satisfaction rates.

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Country: Australia

Supervisor/s: Ann Bonner (Queensland University of Technology), Louise Purtell (Queensland University of Technology), Theresa Green (Queensland University of Technology)

Thesis title:

Impaired Cognition in End Stage Kidney Disease: Prevalence, Predictors and Differences Between Treatment

Description:

This thesis assessed cognitive impairment in people with end stage kidney disease. It found that over a third were cognitively impaired. More than half of those who had not yet started kidney replacement treatment and those already receiving haemodialysis were more likely than other groups to be cognitively impaired. The implications from these findings will influence people being able to make informed decisions about their healthcare, and that changes for patient education ought to occur due to altered levels of understanding.

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Country: Australia

Supervisor/s: Patricia Yates (Queensland University of Technology), Raymond Chan (Queensland University of Technology), Steven Mcphail (Queensland University of Technology)

Thesis title:

A Cost-Effectiveness Analysis of A Silicone Film-Forming Gel Versus 10% Glycerine in Patients with Head and Neck Cancer

Description:

Radiation dermatitis is one of the most common and difficult to manage side effects for patients with head and neck cancer undergoing radiotherapy. This thesis involved a trial based economic evaluation of a silicone gel (StrataXRT«) versus 10% Glycerine (Sorbolene) in the management of radiation dermatitis in patients with head and neck cancer. The study highlighted the importance of undertaking robust economic evaluations to inform health service managers' decision making about resource use. The use of silicone and other gels remains a promising area for future research.

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Supervisor/s: Ian Stewart (Queensland University of Technology), Geoffrey Minett (Queensland University of Technology), Matthew Maley (Queensland University of Technology)

Thesis title:

The Evaluation of Cooling Systems to Reduce Heat Strain in Individuals Wearing Personal Protective Clothing

Description:

Personal cooling systems, worn by emergency first responders under protective clothing, are designed to minimise the risk of heat illness. This thesis reaffirms that first responder agencies (e.g. fire, police) identify heat illness as a genuine threat to worker safety. Further, it identifies that certain personal cooling systems alleviate the heat better than others, and the combination of air temperature and humidity has a direct effect on their performance. Therefore, the use of cooling systems, by first responder agencies, needs to be considered in the context of the protective clothing being worn and the environment encountered.

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Supervisor/s: Elizabeth Williams (Queensland University of Technology), Brett Hollier (Queensland University of Technology)

Thesis title:

Targeting Epithelial to Mesenchymal Transition (EMT) to Modulate Prostate Cancer Cell Chemoresistance

Description:

Understanding why some cancer cells do not respond to chemotherapy is critical to developing new ways to control cancer. This project defined the important role of tumour cell plasticity in the response of prostate cancer cells to chemotherapy drugs. Key proteins that control cell plasticity have emerged as promising theranostic targets that can be pursued to develop new approaches to improve outcomes for men with metastatic prostate cancer.

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Country: Wales

Supervisor/s: Patricia Yates (Queensland University of Technology), Raymond Chan (Queensland University of Technology)

Thesis title:

Planning for Paediatric Palliative Care Services in Queensland: Characteristics, Demographics and Health Needs of Children and Young People with Life-Limiting Conditions

Description:

This thesis provides detailed estimates of the number of children and young people aged 0 to 21 years living in Queensland who are eligible for palliative care and presents a comprehensive analysis of the clinical and demographic characteristics of this group using population-based administrative data. The thesis provides an evidence-based foundation to inform health policy and guide strategic and operational planning for paediatric palliative care. By reviewing multiple sources of data through a complex adaptive system lens, the thesis has enabled consideration of the relationships between need, demand and supply for paediatric palliative care, while emphasising the complexities of health service planning.

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Supervisor/s: Mary Hannan-Jones (Queensland University of Technology), Katherine Hanna (Queensland University of Technology), Danielle Gallegos (Queensland University of Technology)

Thesis title:

Vitamin B12 Intake of Women of Reproductive Age on a Vegan Diet in Australia

Description:

This study examined the vitamin B12 intake of 1530 women of reproductive age on a vegan diet in Australia, using an online survey which included a food frequency questionnaire and assessment of supplemental intake. Relationships were found between adequacy of intake and participants' characteristics, including knowledge attitudes and beliefs relating to vitamin B12. The limitations of current methodology for assessing vitamin B12 status and of considering supplemental intake as equivalent to intake from food were examined. The information gained from this study provides direction to interventions aimed at ensuring adequacy of vitamin B12 intake in people on plant-based diets.

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Thesis title:

Eco-Epidemiology of Dengue and Ross River Viruses Across Rural and Urban Environments

Description:

This research investigated the epidemiology and ecology of two mosquito-borne viruses of public health importance in the Asia-Pacific: dengue and Ross River viruses. Patterns of disease caused by these two viruses were analysed in space and time across rural and urban settings, and some of the influencing demographic, geographic and environmental factors were explored. The outcomes of this research included increased understanding of the complex influences on mosquito-borne virus transmission in different human habitats, and the development of unique field and lab-based approaches for studying how the interactions of mosquitoes, wildlife, humans and their environments can cause disease.

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Supervisor/s: David Brain (Queensland University of Technology), Hannah Thomas (Queensland University of Technology), Rosana Pacella (Queensland University of Technology), Nicholas Graves (Queensland University of Technology)

Thesis title:

Bullying in Australia: Prevalence, Health Outcomes, Cost Outcomes, and Economic Evaluation of Bullying Prevention

Description:

Bullying among children and adolescents is a major public health problem. The negative consequences of bullying are not limited to health problems, nor to experiences in childhood and adolescence, and can persist into adulthood. This research found that one in seven Australian children experienced bullying victimisation; bullying victimisation contributes a significant proportion of the burden of disease; a substantial annual cost to Australian society results from bullying; and further investment in bullying prevention is an efficient use of scarce healthcare resources. This thesis makes an important contribution to the field of bullying and the vital role of bullying intervention programmes.

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Supervisor/s: Stewart Trost (Queensland University of Technology), Rebecca Byrne (Queensland University of Technology), Rebecca Golley (Flinders University)

Thesis title:

Development and Evaluation of an Intervention Targeting Parenting Practices Associated with Obesity-Related Behaviours in Young Children Attending Playgroup

Description:

This thesis focussed on obesity prevention in children under five years by targeting parenting practices that support the development of healthy lifestyle behaviours in respect to eating, active play, screen time and sleep. An intervention, developed from focus groups with parents, was trialled in community playgroups in Brisbane and was both feasible and acceptable. The aim was to support parents to use autonomy promoting parenting practices. The program, unique in the community playgroup setting, consisted of five fortnightly sessions, delivered during playgroup time. A peer facilitator led brief conversations around parenting challenges and strategies for using appropriate parenting practices.

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Country: England

Supervisor/s: Rodney Troutbeck (Queensland University of Technology), Andry Rakotonirainy (Queensland University of Technology)

Thesis title:

An Explanatory Model for Quantification of Road Safety Barrier Impact Risk

Description:

Road safety barriers are a primary treatment to reduce the consequences of roadway departure crashes. Currently there is limited guidance for selecting a barrier. This study defines a barrier's aggressiveness to vehicle occupants, based on a barrier's flexibility and the impacting vehicle's mass, speed and angle. The study evaluates the likely impact consequences through estimates of the Acceleration Severity Index (ASI). This knowledge enables road design engineers to be better able to select an appropriate road safety barrier for different sites. This new knowledge will lead to safer roads and roadsides and reduced trauma for society.

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Supervisor/s: Beatrix Feigl (Queensland University of Technology), Andrew Zele (Queensland University of Technology), Prakash Adhikari (Queensland University of Technology)

Thesis title:

Melanopsin Photoreceptor Contributions to Brightness Perception and Photophobia

Description:

This thesis investigated the role of rod, cone and melanopsin photoreceptors in mediating human brightness perception across the natural operating range of the eye. In scotopic illumination, brightness perception is initiated by rod signals transmitted to higher brain centres via conventional retinogeniculate and melanopsin pathways. In mesopic illumination, melanopsin photoreception begins to scale brightness perception. In photopic illumination, melanopsin and cone luminance signals combine to mediate light hypersensitivity (photophobia) in healthy controls and migraineurs. These findings advance understanding of the relative photoreceptor contributions to human vision and guide the development of lighting technologies for individuals who experience disease-related photophobia.

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Country: Eritrea

Supervisor/s: Pamela Pollock (Queensland University of Technology), Cameron Snell (Queensland University of Technology), Elizabeth Williams (Queensland University of Technology)

Thesis title:

Prognostic, Predictive, and Therapeutic Role of FGFR2 Isoforms and Cognate FGF Ligands in Endometrial Cancer

Description:

This project investigated the role of FGFR2 isoforms (FGFR2b/FGFR2c) and their cognate FGF ligands in endometrial cancer development, prognosis, and treatment response via designing and validating an innovative BaseScope RNA in-situ hybridization assay and generating patient tumour-derived organoids. FGFR2c and high FGF18 expression were significantly associated with aggressive tumour characteristics and poor survival outcome. It was also noted FGFR2c expression is associated with progestin treatment failure in atypical hyperplasia and well-differentiated endometrial cancers. Overall, FGFR2c and FGF18 are independent prognostic biomarkers that could improve our ability to predict patient prognosis and predict response to FGFR inhibitor treatment in endometrial cancer.

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Supervisor/s: Francesca Frentiu (Queensland University of Technology), Roberto Barrero Gumiel (Queensland University of Technology), Liesel Stassen (Queensland University of Technology), Louise Bishop (Queensland University of Technology)

Thesis title:

Chikungunya Virus Transmission Dynamics and Immune Responses in Mosquitoes

Description:

Chikungunya is a mosquito-borne viral disease that has become a public health threat in tropical and sub-tropical regions of the world. The research presented here documents the epidemiology of the disease in the Asia-Pacific region. It then examines the effect of ambient temperature on the ability of two mosquito species in Australia to transmit the virus. Finally, it investigates how gene expression in mosquitoes infected with chikungunya virus might vary depending on ambient temperature. The findings presented in the thesis increase our understanding of this neglected tropical disease and may contribute to better managing the risk of future outbreaks.

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Buthaina Al Kindi

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Country: Oman

Supervisor/s: Barry Watson (Queensland University of Technology), Mark King (Queensland University of Technology), Jeremy Davey (Queensland University of Technology), Kerry Armstrong (Queensland University of Technology)

Thesis title:

Development of a Culturally Sensitive Evaluation Framework for the Oman Research Council's Road Safety Research Program

Description:

This program of research involved the development of a culturally sensitive evaluation framework for the Oman Research Council's Road Safety Research Program. The research identified the key Omani cultural values that create opportunities and challenges for conducting program evaluation within the Oman cultural context and how these might impact specifically on an evaluation of the Road Safety Research Program. The evaluation framework that emerged from the research consisted of a set of complementary evaluation approaches, processes and standards adapted to the Omani context, along with various capacity-building initiatives designed to establish a culture of evaluation within the Omani Research Council.

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Country: Australia

Supervisor/s: Philippe Lacherez (Queensland University of Technology), Renata Meuter (Queensland University of Technology)

Thesis title:

Exploring the Cognitive Basis of Music that Gets Stuck in the Head

Description:

This thesis investigated music that repeats persistently in the mind (an 'earworm'), hypothesising that this phenomenon is characterised by automatic mental singing along via working memory resources. In four experiments, a dual-task paradigm was employed to assess performance on a phonological task while participants were experiencing an earworm episode. Earworms were examined for familiar vocal songs, instrumental music, and novel vocal songs. Findings demonstrated that phonological working memory resources are recruited during vocal and instrumental music earworms. This paradigm can be used to determine the types of music most effective in eliciting earworms, and individuals more susceptible to the experience.

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Country: Australia

Supervisor/s: Kirsten Vallmuur (Queensland University of Technology), Narelle Haworth (Queensland University of Technology), Darren Wishart (Australian Road Research Board)

Thesis title:

Safety in Supply Chains: Evaluating Sources of Evidence

Description:

Focussed on supply chains and vulnerable workers, this research aims to address gaps in understanding the:- quality, completeness and usefulness of key data sources for occupational injury surveillance-occupational injury patterns and trends across different data collections (hospitalised injuries, workers' compensation claims and regulator reports)-regulator enforcement data patterns and trends -how parties communicate, consult and coordinate regarding hazards and risks to health and safety across supply chain operations. This research identified opportunities to achieve a more complete occupational-injury surveillance profile that could better identify the at-risk worker population and enable regulators to employ more risk-responsive supply chain interventions.

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Country: Australia

Supervisor/s: Kirsten Vallmuur (Queensland University of Technology), Benjamin Mathews (Queensland University of Technology)

Thesis title:

Evaluating Australian and US Consumer Product Safety Regulatory Responses to Hazardous Children's Products

Description:

While there is evidence that unsafe children's products enter the Australian market, no research currently examines product safety regulatory responses to identify their frequency, type and nature. This study built, and then analysed, an extensive knowledge base of Australian and US product safety regulatory responses over the period 2011-17 to provide a more comprehensive understanding of hazardous children's products. This cross-disciplinary research then applied a public health approach to this unique empirical evidence to identify the need for further child product safety research and regulatory reform in Australia.

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Country: Australia

Supervisor/s: Larisa Haupt (Queensland University of Technology), Lynette Griffiths (Queensland University of Technology)

Thesis title:

Heparan Sulfate Proteoglycans in Human Models of Neurogenesis

Description:

Thesis information is under embargo until 17 August 2022.

Introduction

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Chloe van der Burg

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Country: Australia

Supervisor/s: Elise Pelzer (Queensland University of Technology), Peter Prentis (Queensland University of Technology), Terence Walsh (Queensland University of Technology), Edward Gilding (University of Queensland)

Thesis title:

Understanding the Role of Innate Immune and Novel Genes in the Evolution and Regeneration of Sea Anemones

Description:

This project generated and utilised genomic resources, to understand the evolution of genes involved in immune response and whole animal regeneration. Overall, this thesis revealed that specific utilisation of different gene sets after catastrophic injury can contribute to why some animals can regenerate extremely rapidly and efficiently and why others cannot. Further, the experimental results demonstrated how both old and new genes are precisely regulated in immune and regeneration responses once they are recruited into these complex processes.

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Country: Australia

Supervisor/s: Ian Renshaw (Queensland University of Technology), Remco Polman (Queensland University of Technology), Daniel Greenwood (University of Memphis)

Thesis title:

Interacting Constraints in High Performance Long Jumping

Description:

This thesis details a series of studies investigating long jump locomotor pointing tasks through a theoretical framework of ecological dynamics. A multi-methods approach was used to investigate athlete behaviours in competition environments revealing the complexities of field-based locomotor pointing tasks, providing important information for the design of practice environments for practitioners. The development of a new substantive theoretical model of perform, respond and manage, presents as a novel tool for practitioners in understanding emergent behaviour in long jump and can be used to better frame representative learning designs. Importantly, athletes need to prepare for more than just a technical performance.

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Country: Bulgaria

Supervisor/s: Ronald Schroeter (Queensland University of Technology), Andry Rakotonirainy (Queensland University of Technology), Melanie White (Queensland University of Technology)

Thesis title:

Smartphone Apps and Virtual Reality as Road Safety Interventions: Examining Their Real-World Effects for Young Drivers

Description:

Young drivers are early technology adopters. Rapid developments in consumer-oriented technologies (COTs) provide opportunities to encourage safer driving amongst them. Safer driving can potentially reduce road trauma. This thesis focused on using a smartphone safe-driving app and VR software as intervention tools in two separate COTs-based interventions. The undertaken approach closely mimicked their use in real-life conditions. The targeted behaviours were speeding and driving under the influence of alcohol or drugs. By evaluating the two interventions, this multidisciplinary research contributed to a better understanding of the effect of using the two examples of COTs outside the laboratory.

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Country: Australia

Supervisor/s: Jonathan Harris (Queensland University of Technology), Jonathan Peake (Queensland University of Technology)

Thesis title:

Probing the Role of Methionine Oxidation in Substrate and Inhibitor Interactions with Native and Recombinant Human Neutrophil Elastase

Description:

This thesis was an exploration of how Human Neutrophil Elastase (HNE) activity can be modulated by oxidation of methionine residues located on substrates and inhibitors. Research focused on producing a molecular toolbox of innovative HNE substrates and inhibitors specifically engineered to include methionine, then assessing the mechanism by which oxidation leads to targeted interaction with HNE. This may be an important biochemical process in chronic obstructive pulmonary disease, which is linked to HNE destruction of elastic lung tissue together with oxidative damage by cigarette smoke and neutrophil-mediated inflammation.

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Country: Iran

Supervisor/s: Gerard Fitzgerald (Queensland University of Technology), Lisa Hall (Queensland University of Technology), Andrew Smirnov (Queensland University of Technology), Tony Rahman (Queensland Health)

Thesis title:

Successful Community-Based Models of Care for the Elimination of Hepatitis C Virus as a Public Health Threat

Description:

The introduction of direct-acting antiviral drugs provides an opportunity to eliminate Hepatitis C Virus (HCV), however, low treatment uptake is challenging. This research aimed to develop a framework for community-based models for treating HCV. This research involved analysis of models reported in the literature, a Delphi study to identify the key elements of successful models, and a detailed case study to identify enablers and barriers for the provision of community-based HCV treatment. This research has shown that successful community-based models need to implement various strategies to provide support for patients and primary care providers and collaborate with other related services.

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Country: England

Supervisor/s: Elizabeth Beattie (Queensland University of Technology), Elaine Fielding (Queensland University of Technology), Helen Edwards (Queensland University of Technology), Joseph Gaugler (University of Minnesota)

Thesis title:

“Bereavement without Death”: Improving Psychosocial Support of Spousal Family Carers of People with Dementia Following Placement into Residential Care

Description:

This research explored the support needs of Australian spousal carers of people with dementia following residential care placement and piloted an evidence-based intervention to improve psychosocial outcomes. Overall, findings indicate that many spouses report high levels of stress, depression, guilt, and grief, but have not received any formal dementia education, counselling nor attended support groups. The pilot study found the Residential Care Transitions Module (developed in the US) to be feasible within an Australian context, with promising findings regarding acceptance of loss. The research adds to the evidence-base regarding the need for, and potential of, psychosocial interventions to improve support to spousal dementia carers post-placement.

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Country: Australia

Supervisor/s: Mary-Louise Fleming (Queensland University of Technology), Gerard Fitzgerald (Queensland University of Technology)

Thesis title:

Managing Infectious Disease Risks in Long Day Care Services - How Well Does This Happen

Description:

The transmission of infectious diseases in childcare centres regularly occur and can pose a risk to the health of young children. This research explored the issues that support or impede good infection prevention measures and found gaps in policy and training that, if addressed, could help reduce disease transmission risk. The findings from this research will help inform national conversations to ensure evidence-based infection prevention measures are part of standard practice in the early childhood education and care sector.

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Francesco Casciello

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Thesis title:

Thesis information is under embargo.

Description:

Thesis information is under embargo.

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Supervisor/s: Jason Lee (Queensland University of Technology), Derek Richard (Queensland University of Technology), Kenneth O'Byrne (Queensland University of Technology), Pamela Pollock (Queensland University of Technology)

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Gabrielle Bradshaw

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Country: South Africa

Supervisor/s: Lynette Griffiths (Queensland University of Technology), Heidi Sutherland (Queensland University of Technology), Larisa Haupt (Queensland University of Technology)

Thesis title:

Investigation of Genetic Variants in Human Immunodeficiency and an Australian Non-Hodgkin Lymphoma Population

Description:

This investigative study identified a missense moesin protein variant R171WMSN as the disease-causing mutation in an unknown primary immunodeficiency disorder (PID) through an exome sequencing (WES) approach. As PIDs can confer incidence of lymphoproliferative disorders, candidate genes and variants identified by WES were also investigated in another lymphoid abnormality, i.e. non-Hodgkin lymphoma (NHL), to determine association with NHL subtypes. In addition, variants located within microRNAs and their targets were investigated in association with NHL susceptibility in an Australian cohort of matched NHL cases and healthy controls where SNPs in MIR143 were shown to be significantly associated with increased NHL risk.

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Hamed Niyazmand

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Country: Iran

Supervisor/s: Scott Read (Queensland University of Technology), David Atchison (Queensland University of Technology), Michael Collins (Queensland University of Technology)

Thesis title:

Anterior Scleral Changes With Accommodation and Convergence

Description:

This research provided new insight into the effect of near activities and short-sightedness (myopia) on the anterior eye structure. The sclera is the eye's protective outer layer, that plays an important role in myopia, one of the most common eye conditions that has also been linked to near activities (e.g. reading). This project evaluated the anterior sclera in participants with different levels of short-sightedness and assessed how the sclera changes during near activities. Scleral shape changed significantly with increasing levels of short-sightedness, and near activities (focusing and convergence) caused a forward movement and thickening of the nasal anterior sclera.

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Herdiyan Maulana

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Country: Indonesia

Supervisor/s: Nigar Khawaja (Queensland University of Technology), Patricia Obst (Queensland University of Technology)

Thesis title:

An Exploration of Psycho-Social and Cultural Factors of Well-Being in the Indonesian Context

Description:

A series of four studies, using a mixed-method approach, were conducted to explore the wellbeing of Indonesians. First, the Indonesian's perspective of well-being was explored. Second, frequently used scales developed in the West were examined to study if they were appropriate measure of this populations' well-being related experiences. The findings indicated that number of items in the existing well-being measure were not culturally relevant and meaningful for the Indonesian population. Indonesians regarded basic needs, social relations and positive worldviews as important components of well-being. Third, a new culturally relevant scale was developed to measure the well-being of Indonesians. Finally, a model explaining the role of universal and culture specific relational and social factors of well-being in Indonesian sample was identified and tested. Overall, this body of research strengthened the importance of the cross-cultural perspective of wellbeing.

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Jacqueline Peet

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Country: Australia

Supervisor/s: Clint Douglas (Queensland University of Technology), Karen Theobald (Queensland University of Technology)

Thesis title:

Strengthening Nursing Surveillance in General Wards: A Practice Development Approach

Description:

This thesis evaluated an emancipatory practice development (ePD) approach to strengthening nursing surveillance on a single medical-surgical ward. A relationship was established, and a researcher embedded on a ward around a shared interest of strengthening nursing surveillance and patient safety. Ward engagement with ePD methods of critical reflection, holistic facilitation and active learning were supported through workplace workshops and the formation of an action learning set with a group of ward RNs. The ward travelled through a transformative and at time turbulent process of resistance and retreat towards a new learning culture where nursing surveillance is visible and valued.

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Country: Australia

Supervisor/s: Md. Mazharul Haque (Queensland University of Technology), Mark King (Queensland University of Technology), Simon Washington (University of Queensland)

Thesis title:

The Effects of Road Geometry and Posted Speed Limits on Driver Speed Selection

Description:

This research investigates the complex relationship between roadway design and operating speeds and how drivers respond to these roadway design characteristics. It seeks to understand the effects of road geometry within a complex urban road environment on driver speed selection by conducting an advanced driving simulator experiment and an observational study completed in an Australian town. The results show that a reduction or an increase in lane width, the presence of posted speed signage or a change in the posted speed limit, horizontal curves, and centre line marking influence driver speed selections along low-speed urban corridors.

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Country: Australia

Supervisor/s: Christine Morley (Queensland University of Technology), Heather Fraser (Queensland University of Technology), Natasha Budd (Performance Frontiers)

Thesis title:

Performance as a Platform for Critical Pedagogy in Social Work Education

Description:

The aim of this research is to discover whether and how 'critical performance pedagogy' (CPP) is a strategy for students to think critically about the ways they link theory and practice in social work using theatrical performance as a platform. Using critical thematic and critical discourse analysis of qualitative interviews, video recorded performances and corresponding texts, this research has uncovered the various ways CPP supports critical and collaborative engagement in social work. The research indicates, students initially develop social and political analysis, make relevant links between theory and practice (praxis) and foster skills in democratic leadership and social action.

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Country: China

Supervisor/s: Wenbiao Hu (Queensland University of Technology), Hilary Bambrick (Queensland University of Technology), Zhiwei Xu (Queensland University of Technology), Shilu Tong (Queensland University of Technology)

Thesis title:

Short-term Effect of Ambient Temperature on Mortality and Morbidity in Australia: Spatial and Temporal Analysis

Description:

Climate change is the biggest threat to global public health of the 21st century and Australia is one of many affected countries. This thesis used time-series analysis to estimate the total mortality burden attributable to temperature exposure in the top five largest cities of Australia and applied Bayesian spatial analysis to investigate the spatial association between temperature and hospitalizations in Brisbane, Australia. The findings of this thesis add to increasing literature of temperature and human health and may have important implications for mitigating the negative health effects of climate change in Australia.

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Country: Australia

Supervisor/s: Christine Morley (Queensland University of Technology), Michael Flood (Queensland University of Technology), Phillip Ablett (Queensland University of Technology)

Thesis title:

The Political Nature of Conflict: Mediation as a Discursive Practice in Family Dispute Resolution

Description:

This thesis explores the ways the dominant discourses of conflict resolution, legal rationality and parenting in family law shape the practice of mediation in family dispute resolution (FDR). A feminist post-structural analysis identifies contradictions and gaps in practice, particularly those arising when working with families with a history of domestic violence. This research challenges the notions of objectivity, neutrality and participant self-determination and argues instead for a reconceptualisation of mediation to take account of power relations and adopt critical postmodern understandings of power in order to navigate some of the challenges inherent in the practice of mediation.

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Country: Australia

Supervisor/s: Danielle Gallegos (Queensland University of Technology), Susan Irvine (Queensland University of Technology), Julie Smith (Australian National University)

Thesis title:

Exploring Barriers and Enablers in Early Childhood Education and Care Services to Meet Australian Infant Feeding Guidelines

Description:

This thesis studies infant and young child feeding in Early Childhood Education and Care services in Australia, an environment of increasing importance to the child population. It examines policies and practices highlighting the need for visibility, support and collaboration in infant feeding in the first 1000 days to support ongoing health and development. It uniquely gives voice to experience of assessors as well as educators and families in eliciting strategies for increasing awareness and support for optimal infant and young child feeding practices in Early Childhood Education and Care.

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Country: Australia

Supervisor/s: Kerry-Ann O'Grady (Queensland University of Technology), Maree Toombs (University of Queensland), Newell Johnson (Griffith University), Peter Newcombe (University of Queensland), Neil King (Queensland University of Technology)

Thesis title:

Oral Health in an Urban, Aboriginal and Torres Strait Islander Community in Queensland, Australia and the Development of a Culturally Specific Health-Related Quality of Life Measurement Tool

Description:

Within Australia, data on the oral health and health-related quality of life experiences of Aboriginal and Torres Strait Islander children living in urban areas are lacking. This project utilised a mixed-methods approach to contribute new epidemiological and life experience data to the field of oral health and create a culturally specific, parent-proxy tool to measure the health-related quality of life of Aboriginal and Torres Strait Islander children. These findings provide contemporary oral health data to inform policy and a foundation for the development of other culturally specific health-related quality of life measures for Aboriginal and Torres Strait Islander peoples.

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Country: Australia

Supervisor/s: Helen Vidgen (Queensland University of Technology), Elizabeth Denney-Wilson (University of Technology Sydney), Lynne Daniels (Queensland University of Technology)

Thesis title:

Early Identification of Childhood Overweight and Obesity - The Wicked Problem in Australia

Description:

This thesis investigated how to improve early identification of childhood overweight and obesity in Australia. In a series of three studies, this research applied behavioural change theory to examine determinants to assessing children's weight status in primary health care. The recommendations provided in this thesis aim to affect policy and practice so that children can be better supported in maintaining and improving their health and wellbeing.

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Country: Australia

Supervisor/s: Lisa Nissen (Queensland University of Technology), Gregory Kyle (Queensland University of Technology), Andrew Hale (Queensland Health), Liza-Jane McBride (Queensland University of Technology)

Thesis title:

An Evaluation of Pharmacist and Physiotherapist Prescribing Trials in Queensland

Description:

Whilst prescribing has traditionally been the remit of medical practitioners, there is evidence to suggest that extending prescribing rights to other health professions will benefit patients. This research evaluated the implementation, performance, and acceptability of novel pharmacist and physiotherapist prescribing initiatives across multiple Queensland Health facilities. Prescribing was perceived to be safe, effective, and improve patient access to services. Healthcare teams were supportive of the initiatives and receptive to the further development of allied health prescribing in Australia. Operational and professional barriers were identified, and these will inform the design of future non-medical prescribing implementation and evaluation frameworks.

Introduction

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Supervisor/s: Colleen Nelson (Queensland University of Technology), Carl Sadowski (Queensland University of Technology), Derek Richard (Queensland University of Technology), Jennifer Gunter (Queensland University of Technology), Lisa Philp (Queensland University of Technology)

Thesis title:

Investigation of Metabolic Rewiring in Prostate Cancer Cells during the Adaptive Response to Androgen-Targeted Therapies

Description:

The development of therapy resistance is a major obstacle in the successful treatment of advanced prostate cancer. This thesis investigated mechanisms that help drive therapy resistance and discovered that prostate cancer cells can utilise different metabolic pathways in order to become resistant to current therapies. This project also explores new therapeutic strategies to use in combination with current treatments to help fight disease progression and improve outcomes for men with prostate cancer.

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Country: Australia

Supervisor/s: Danielle Gallegos (Queensland University of Technology), Greg Cox (Queensland University of Technology)

Thesis title:

Bone Health and High-Performance Athletes

Description:

Physical activity is beneficial for bones. However, intense and repetitive training as experienced in elite sport creates situations in which bone health may be compromised. This thesis provides evidence of reduced bone mineral density, and increased risk of injury, in International level triathletes. Regional differences in bone mineral density were found in relation to sex and training volume. The outcomes of poor bone health in elite athletes can interrupt or prematurely end careers (stress fractures) and may endure into post-career life (osteoporosis). Athlete bone health, therefore, should be monitored regularly, particularly in those that compete in endurance sports.

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Country: Australia

Supervisor/s: Vivienne Tippett (Queensland University of Technology), Ian Shochet (Queensland University of Technology)

Thesis title:

A Prospective Study of the Impact of Deployment on the Intimate Relationships of Australian Army Personnel and Their Loved Ones

Description:

This thesis explores the impact of deployment to a warzone with the Australian Army on intimate relationships. It examines the applicability of two relationship theoretical frameworks for this cohort and has resulted in a new application of these theoretical frameworks, and extended the current evidence base as to how military deployment can impact intimate relationships. The findings provide a unique evidence-based platform on which to develop targeted education for civilian intimate partners and military personnel pre- and post-deployment.

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Country: Ethiopia

Supervisor/s: Danielle Gallegos (Queensland University of Technology), Oksana Zelenko (Queensland University of Technology), Afework Mulugeta (Mekelle University)

Thesis title:

Effectiveness of SMS Text Messaging to Improve Exclusive Breastfeeding in Mekelle, Ethiopia

Description:

Thesis information is under embargo until 10 September 2021.

Introduction

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Country: Australia

Supervisor/s: Angela Watson (Queensland University of Technology), Kirsten Vallmuur (Queensland University of Technology), Ioni Lewis (Queensland University of Technology)

Thesis title:

Quads and Kids: Understanding Parents' Attitudes and Beliefs about Safety and Risks

Description:

Quad bike incidents have been recognised as a public health problem worldwide. This thesis examined the beliefs and attitudes of parents towards allowing their children to ride quad bikes for the purposes of content development for educational safety campaigns. Parents' beliefs and attitudes were explored through a series of surveys and interviews. Message concepts were examined with parents in a series of interviews and a quad bike safety expert panel via a Delphi study. Message concepts either challenged or promoted existing beliefs to deter parents from allowing their children to ride quad bikes to subsequently reduce child-related injury and fatality.

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Country: China

Supervisor/s: Michelle Gattton (Queensland University of Technology), Jiandong Sun (Queensland University of Technology), Peter Baade (Cancer Council Queensland), Susanna Cramb (Cancer Council Queensland)

Thesis title:

Burden of Oesophageal Cancer in Shandong, China: Geographical and Socioeconomic Disparities

Description:

China accounts for half of the global oesophageal cancer deaths. This project systematically assessed the burden of oesophageal cancer - as indicated by incidence, mortality, and survival - in Shandong, China, and investigated the influence of geographical and socioeconomic factors on the different indicators. The results suggest that the incidence (Shandong average 17.6 per 100,000) and mortality rate (14.1 per 100,000) increased with decreasing county-level socioeconomic status (SES), while the five-year survival rate (23.6%) decreased with decreasing SES. The findings provide evidence to help policy-makers and researchers identify priority populations, design and execute health policies, and minimise inequalities.

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Country: Vietnam

Supervisor/s: Ann Bonner (Queensland University of Technology), Theresa Green (Queensland University of Technology)

Thesis title:

Exploration of Social Support for People Receiving Haemodialysis Therapy in Vietnam

Description:

This study explored multiple aspects of social support from patients, caregivers and healthcare staff's perspectives in the Vietnamese haemodialysis context. The study identified the interconnection of roles of patients, caregivers and healthcare staff as members of caregiving triad or support network in providing support in haemodialysis. Contextual factors including financial burden and family culture were found to be important factors affecting the provision of social support. This study's novel contribution could lead to improving the provision of social support for people on haemodialysis which is crucial due to the growing global burden of end stage kidney disease.

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Country: Australia

Supervisor/s: Elizabeth Beattie (Queensland University of Technology), Elaine Fielding (Queensland University of Technology), Margaret Macandrew (Queensland University of Technology)

Thesis title:

Enhancing Quality of Life for Aged Care Facility Residents with Dementia: The Role of 'Meaningful Activities'

Description:

This study explored quality of life and 'meaningful activity' for people living with dementia in residential aged care facilities, drawing on the experiences and perspectives of residents, their family members and care staff. The findings identified groups of residents who have fewer activity opportunities and less frequent participation in activities. A deeper understanding was developed of 'meaningful activity', the benefits of participating in these types of activities and the supports needed for residents to participate. The knowledge gained from this study will inform care practices and improve the daily lives of people living with dementia in residential aged care facilities.

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Thesis title:

Thesis information is under embargo.

Description:

Thesis information is under embargo.

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Thesis title:

Thesis information is under embargo.

Description:

Thesis information is under embargo.

Thesis DOI: <http://doi.org/10.5204/thesis.eprints.199695>

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Supervisor/s: Lisa Nissen (Queensland University of Technology), Gregory Kyle (Queensland University of Technology), Charles Mitchell (Queensland University of Technology), Elaine Lum (Queensland University of Technology), Robyn Nash (Queensland University of Technology)

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Country: Italy

Supervisor/s: Patrick Johnston (Queensland University of Technology), Philippe Lacherez (Queensland University of Technology), Otto Johnson (Private Individual)

Thesis title:

Exploring the Neural Mechanisms Underlying Face Processing Using Electrophysiology and Behaviour: Domain Specific Processing or Visual Expertise?

Description:

This research investigated how people respond to visual presentation of novel stimuli depicting familiar and unfamiliar objects from different viewpoints, to study the effects of conceptual expertise on early brain signals. During a set of experiments time sensitive electrophysiological brain, and behavioural responses were recorded whilst people viewed such stimuli. This thesis employed a new approach, aimed to disentangle a long scientific debate and found compelling evidence to support that humans' brain responses to visual stimuli are modulated by expertise across a range of stimulus categories and that canonical orientations of stimulus objects are an important driver of these effects.

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Country: Australia

Supervisor/s: Steven Mcphail (Queensland University of Technology), Adrian Barnett (Queensland University of Technology), Leanne Aitken (Griffith University)

Thesis title:

Exercise Interventions with Critically Ill Patients in an Australian Tertiary Intensive Care Unit

Description:

This thesis investigated the physical impairments experienced by critically ill patients in intensive care. Clinicians' perceptions regarding exercise with critically ill patients were explored, and medical records analysed to illustrate that despite clinicians' positive perceptions regarding exercise, critically ill patients rarely completed exercise interventions whilst admitted to the intensive care unit. A preliminary randomised control trial was conducted that evaluated the effectiveness of an innovative in-bed cycling intervention. In-bed cycling with critically ill patients was found to be safe, feasible and acceptable to patients, families and clinicians. Promising patient outcomes were identified that justify a future multi-centre randomised control trial.

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Country: Australia

Supervisor/s: Lisa Nissen (Queensland University of Technology), Gregory Kyle (Queensland University of Technology), Esther Lau (Queensland University of Technology), Debbie Rigby (DR Pharmacy Consulting), Vincent Chan (Royal Melbourne Institute of Technology - RMIT University)

Thesis title:

An Exploration and Evaluation of the Work Processes of Accredited Pharmacists Performing Home Medicines Reviews in Australia

Description:

The Australian Government commenced Home Medicines Review (HMR) program funding in 2001 to promote safe and effective medicines use and to optimise prescribing in the community. However, little is known about accredited pharmacists' (APs') HMR work processes, and recent program restrictions limited HMR community access. This multiphase study explores how HMRs are conducted, the work complexity, and the service time investment performed by APs. The findings include justifying national health program reform to support in-home patient consultations of differing complexity to enable APs to better support patient medicines management and promote the Quality Use of Medicines.

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Marietta Landgraf

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Thesis by Publication

Institute of Health and Biomedical Innovation (IHBI)

Thesis title:

A Humanized Model to Investigate Targeted Therapeutic Strategies Against Cancer Bone Metastasis

Description:

Bone metastasis represents a common and terminal outcome for patients suffering from advanced breast and prostate cancer. The underlying molecular mechanisms are still not fully understood and to date no curative treatments are available. In this PhD project, a humanized mouse model was, for the first time, explored as drug response tool, using new and already clinically approved targeted treatments against cancer bone metastasis. The outcomes and observations presented, show that further humanization of the model will allow for the in-depth dissection of molecular differences between the murine and human bone-microenvironment in the context of drug response.

Thesis DOI: <http://doi.org/10.5204/thesis.eprints.204176>

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Country: Germany

Supervisor/s: Dietmar Hutmacher (Queensland University of Technology), Jacqui McGovern (Queensland University of Technology), Abbas Shafiee (Queensland University of Technology), Boris Michael Holzapfel (University of Wuerzburg), Daniela Loessner (Queensland University of Technology)

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Country: Australia

Supervisor/s: Marguerite Sendall (Queensland University of Technology), Evonne Miller (Queensland University of Technology), Michael Flood (Queensland University of Technology)

Thesis title:

Captain of My Own Ship

Description:

This study sought to understand how middle-class, white, male baby boomers approach ageing in contemporary Western society. The thesis explored the relationship between bodily ageing and identity construction, and the influence of consumer culture in this process. Findings presented an agentic view of middle-aged men's experiences of ageing that challenges traditional notions of 'old men'. Specifically, these baby boomers did not identify as 'old men'. Findings showed there is no 'one-size-fits-all' approach to ageing positively. Instead, myriad, complex, intersecting factors were involved in these men's positive experiences of ageing. These differences resulted in multiple, nuanced pathways towards experiencing ageing positively.

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Country: Australia

Supervisor/s: Gerard Fitzgerald (Queensland University of Technology), Abolghasem Toloo Sheikhzadeh Yazd (Queensland University of Technology), Wenbiao Hu (Queensland University of Technology), Zhiwei Xu (Queensland University of Technology)

Thesis title:

The Relationship between Temperature and Infectious Gastrointestinal Diseases in Queensland, Australia

Description:

This research examined trends in gastrointestinal infections in tropical and subtropical regions over an 11-year period in Queensland. Higher rates were confirmed of Campylobacter and Salmonella GI infections in tropical than in temperate regions with rates increasing over time in both regions and an increased relative risk when the mean daily temperature exceeded temperature thresholds. The increased risk continued for up to 5 days after the index 'heat' day, but the maximum effect was observed two days after the heat event. However, a significant association between heatwaves and GI infections in a same time period could not be identified.

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Country: Iran

Supervisor/s: Trudi Collet (Queensland University of Technology), Christopher Collet (Queensland University of Technology), Robert Harding (Queensland University of Technology)

Thesis title:

The Medicinal Effects of Two Australian Native Plants

Description:

Chronic wounds are a costly and growing problem to global health care systems and affect the productivity of patients and their quality of life. In all cultures, people have used medicinal plants for the treatment and alleviation of various health issues. This project has shown a new potential role for the primary extracts and isolated compounds of *C. terminalis* derived-kino and the primary extracts of *H. tiliaceus* (L.) leaves as wound healing agents in vitro, and hence, potentially paves the way for future novel therapeutics for the treatment of chronic non-healing wounds.

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Country: United States of America

Supervisor/s: Stewart Trost (Queensland University of Technology), Toby Pavey (Queensland University of Technology)

Thesis title:

Application of Machine Learning Approaches for Activity Recognition and Energy Expenditure Prediction in Free Living Children and Adolescents

Description:

This thesis was the first to comprehensively evaluate the application of machine learning approaches for physical activity assessment under real world conditions among children with unique movement patterns. This included preschool age children and children with cerebral palsy. Collectively, the findings from this thesis conclude activity classification models trained on laboratory-based data fail to generalise to a real-world environment and models trained on free-living data have superior accuracy. In contrast, energy expenditure prediction models trained on laboratory-based data generalise to real world environments with no further improvements attained when trained on free-living data.

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Country: Australia

Supervisor/s: David Kavanagh (Queensland University of Technology), Gavan Palk (Queensland University of Technology)

Thesis title:

No Idle Threat: Precursors to Action in Threateners with Mental Illness

Description:

This thesis examined threats of violence made by persons with mental illness and in particular, who acts on violent threats and who does not. Threats were common occurrences and 55% per cent of threateners went on to be violent. Several predictors of violence were identified, including younger age, intellectual impairment and active mood and/or psychotic symptoms. Methods for preventing, identifying and managing threat-related violence were explored. This research has practical implications for those working in mental health settings and those supporting people who have a mental illness and make threats of violence.

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Country: Australia

Supervisor/s: Scott Wearing (Queensland University of Technology), Vivienne Tippet (Queensland University of Technology), Lloyd Reed (Queensland University of Technology)

Thesis title:

Ankle Ligament Thickness in Acute Ankle Sprain: An Ultrasound-based Study

Description:

Ankle sprains are common and, if not identified early, may result in long-standing pain and disability. This project used sonography to measure the structure of ankle ligaments soon after (<12 weeks) an ankle sprain. A reliable protocol to measure sonographic thickness of ankle ligaments was first developed, and then applied in people with and without a sprain. Although not appreciable on standard clinical testing, acutely injured ligaments demonstrated a complex pattern of injury to their sub-bands, which were thicker than those of uninjured and healthy limbs. This new protocol may aid early identification of acute ligament injury following ankle sprains.

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Country: Australia

Supervisor/s: Laura Gregory (Queensland University of Technology), Donna Macgregor (Queensland University of Technology), Mark Barry (Private Practice (self-employed))

Thesis title:

Constructing Improved Standards for Bone Age Assessment of Australian Children

Description:

This study constructed contemporary radiographic bone age estimation standards for the Queensland paediatric population through a morphological and morphometric analysis of the ossification of the hand and wrist. A digital application is introduced and recommended as an alternative to traditional techniques to improve the accuracy of maturational assessment in a multi-ancestral population. These standards will improve the reliability of bone age estimation in clinical and forensic applications.

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Country: Vietnam

Supervisor/s: Christine Morley (Queensland University of Technology), Peter Hill (University of Queensland), Michael Dunne (Queensland University of Technology)

Thesis title:

Implementation of The Law on Domestic Violence Prevention and Control within The Health System: A Case Study in Vietnam

Description:

This study charts the evolution of the Domestic Violence Prevention and Control Law in Vietnam over 15 years. In-depth qualitative methods were used to critically analyse the policy process from agenda-setting, framing, and formal ratification, through to implementation in two provinces. There are major gaps between international and local policies, and between law development and effective, accessible services. Currently, many victims of violence remain under-served. There is a pressing need for changes to the content of the law, and more practical action in health, justice and social services in Vietnam to improve support for survivors of domestic violence.

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Supervisor/s: Wenbiao Hu (Queensland University of Technology), Hilary Bambrick (Queensland University of Technology), Kerrie Mengersen (Queensland University of Technology), Al Fazal Khan (International Centre for Diarrhoeal Disease Research, Bangladesh), Shilu Tong (Queensland University of Technology)

Thesis title:

Effects of Socio-Demographic and Climatic Factors on Childhood Pneumonia in Bangladesh

Description:

Pneumonia, one of the leading causes of children's morbidity and mortality, can be affected by climate change and socio-environmental factors. The thesis applied spatial and temporal models to quantify the effects of climate factors on childhood pneumonia and identify the potential high-risk areas of childhood pneumonia in Bangladesh. The findings of the thesis will inform policymakers about the magnitude of climate variability on childhood pneumonia and aid policymakers provide appropriate health interventions that consider climate variability. The thesis findings also have great potential for developing climate-based early warning framework for childhood pneumonia in Bangladesh.

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Country: Jordan

Supervisor/s: Gerard Fitzgerald (Queensland University of Technology), Erika Borkoles (Queensland University of Technology), Kaeleen Dingle (Queensland University of Technology), Frances Kinnear (Prince Charles Hospital)

Thesis title:

Exploring Safety Culture in Two Hospital Emergency Departments in Australia: A Mixed Methods Study

Description:

The high-pressure environment of hospital Emergency Departments (ED) poses a challenge for ensuring a culture of patient safety. This study explored the elements of safety culture in the ED and identified the factors that influence it, through a survey of hospital staff, interviews with patient safety experts and a modified Delphi study. The study identified a range of managerial, organisational, professional and patient factors that influence safety culture in the ED and proposes a novel conceptual framework that demonstrates how these factors interrelate. It identified the value of effective multidisciplinary teams, professional well-being and improved working environments for the safety of patients.

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Thesis by Monograph

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Thesis title:

Household Food Insecurity and Sanitation in the Mekong Delta, Vietnam

Description:

Thesis information is under embargo until 15 January 2022.

Thesis DOI: <http://doi.org/10.5204/thesis.eprints.203190>

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Country: Vietnam

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Country: Australia

Supervisor/s: Susan De Jersey (Queensland University of Technology), Adrian Barnett (Queensland University of Technology)

Thesis title:

Gestational Diabetes Mellitus: Examining Diversity in Practices, Impact of Clinical Guidelines and the Implementation of a Dietitian-Led Model of Care

Description:

This thesis involved three interrelated studies examining the management of gestational diabetes. Health care professionals in Queensland and Australia were surveyed, Queensland pregnancy data was used to understand how changing the screening and diagnostic recommendations have impacted mothers and their infants, and a dietitian-led model of care was developed, implemented and evaluated to improve the management of gestational diabetes. Australian clinicians lack a consistent approach for gestational diabetes management and changing the diagnostic criteria does not appear to have improved important maternal and infant outcomes. A dietitian-led model of care is a feasible way to manage women with gestational diabetes.

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Country: Australia

Supervisor/s: Anthony Shield (Queensland University of Technology), Graham Kerr (Queensland University of Technology)

Thesis title:

Potential Mechanisms Contributing to Deficiencies in Voluntary Activation Associated with Hamstring Strain Injury

Description:

Recent evidence suggests an inability of those with a prior hamstring strain injury to fully voluntarily activate the previously injured muscle. This may limit gains in strength and muscle fibre length during rehabilitation, both of which are linked to increased risk of injury. Understanding the mechanisms contributing to voluntary activation deficits may assist in developing effective rehabilitation strategies and consequently limiting re-injury risk. The aim of this body of work was to determine the site(s) of failure within the nervous system underpinning lower levels of voluntary activation in participants with prior hamstring injury.

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Country: Australia

Supervisor/s: Stephen Vincent (Queensland University of Technology), Michael Collins (Queensland University of Technology), Scott Read (Queensland University of Technology)

Thesis title:

Ocular Characteristics of Non-Myopic and Myopic Children During Relaxed and Active Accommodation

Description:

Myopia (short-sightedness) arises in childhood due to excessive eye growth and is linked with near work activities. However the underlying mechanisms remain unclear. This thesis examined the short-term optical and structural changes in the eyes of children while focusing at close reading distances and identified important differences between myopic and non-myopic children. The prevalence of myopia is increasing globally, particularly in South-East Asia, and these findings provide new insights into potential mechanisms linking near work and the development and progression of myopia during childhood.

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Country: Australia

Supervisor/s: Judith Burton (Queensland University of Technology), Debbie Duthie (Queensland University of Technology)

Thesis title:

Young Adult Women with Problematic Alcohol Use: The Impact of Social Capital on Recovery

Description:

This study investigated young women's social networks that can help or hinder recovery from problematic alcohol use. The views of experienced staff in alcohol and drug outreach services were examined, finding that social interactions mostly hindered young women's recovery due to the socially embedded acceptance of alcohol use within families, peers and communities. Legislation, policy and practice changes are needed to disseminate information about alcohol harms and encourage help seeking. At agency level, shifting from individualistic approaches to those more inclusive of social networks may activate support from family and friends and result in more positive outcomes for young women.

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Country: Bangladesh

Supervisor/s: Monika Janda (Queensland University of Technology), Steven Mcphail (Queensland University of Technology), Kelly Mulvogue (Royal Brisbane and Women's Hospital)

Thesis title:

Psychological and Pharmacological Treatment of Anxiety and Depression in Patients with Endometrial Cancer

Description:

This research analysed psychological and pharmacological treatment of anxiety and depression in patients with endometrial cancer. Data from a large randomised controlled trial was used to improve understanding of the treatments women currently receive and whether they seem to alleviate psychosocial distress. Results show that screening and assessment of psychological wellbeing could be improved as psychological distress is still often under-recognised in patients. Furthermore, psychological and pharmacological treatments were not always provided according to best treatment guidelines to address symptoms of anxiety and depression. These results can inform future interventions that test novel treatment approaches and improve patients' psychosocial care.

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Country: Iran

Supervisor/s: Zoe Hazelwood (Queensland University of Technology), Jane Shakespeare-Finch (Queensland University of Technology)

Thesis title:

A Salutogenic Approach to Exploring Dyadic Well-being in Iranian Couples from a Forced Migration Background in Australia

Description:

Employing a salutogenic framework and using an exploratory qualitative longitudinal design, this research investigated the wellbeing of Iranian couples who have undergone forced migration to Australia. Ninety-three semi-structured interviews were conducted, and analysed using Interpretive Phenomenological Analysis, the results of which revealed that, despite ongoing distress and challenges, rewards and posttraumatic growth are possible outcomes of forced migration. Implications can inform the Australian Government's policy and practice around resettlement processes, provide mental health professionals with the opportunity to review the focus of current support programs, and assist NGOs and researchers with vital knowledge about the needs of forced migrants.

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Country: Bangladesh

Supervisor/s: Darren Wraith (Queensland University of Technology), Michael Dunne (Queensland University of Technology), Suchithra Naish (Queensland University of Technology)

Thesis title:

Assessment of a Seasonal Pattern of Acute Episodes of Schizophrenia and Potential Drivers in Queensland, Australia

Description:

Seasonal mood and behavioural changes could be more noticeable in patients with schizophrenia and linked to a range of environmental factors. The thesis explored hospital admissions for schizophrenia over time and potential drivers across different regions of Queensland. We found varied seasonal patterns and diverse effects of climatic factors on hospital admissions. Moreover, the cumulative and interactive effects of climatic factors, socio-demographic factors and psychiatric co-morbidities significantly exacerbated hospital admissions. The study results provide much needed evidence on this issue in the literature and aims to help policymakers allocate resources to the most vulnerable groups at particular time periods.

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Thesis title:

EMT & MET: Underpinning the Phenotypic Plasticity and Chemoresistance in Breast Cancer

Description:

This dissertation aims to identify the functional characteristics and genetic factors present within breast cancers that contribute to intratumoural heterogeneity and therapy resistance. The study utilises breast cancer cell line model systems to address epithelial-mesenchymal plasticity (EMP) at the cellular and functional level and underpins its role in cancer biology and chemoresistance. This research also interrogates the EMP programme in single cell-generated clones and through shRNA mediated functional drug screening assay identifies inhibitors that provides significant synergistic drug combinations. A comprehensive review of the drugs that can clinically target EMP was also consolidated.

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Supervisor/s: Jyotsna Batra (Queensland University of Technology), Varinder Jeet (Queensland University of Technology), Judith Clements (Queensland University of Technology)

Thesis title:

Expression, Function, and Regulation of Two Key Genes Involved In Prostate Cancer Metabolism

Description:

Metabolic deregulation is an emergent hallmark of prostate cancer and studies show that altered patterns of metabolic pathways involved in the development of malignancy. A large genetic association on microRNA (miRNA) related genetic variations recently identified single nucleotide polymorphisms (SNPs) in two key metabolic genes. This thesis analysed the role of metabolic genes and functional validation of SNPs and associated miRNAs involved in the regulation of these genes as a mediator of prostate cancer aetiology. The findings from this study suggest that studies of miRNAs and their interactions with SNPs could provide valuable insights into the complicated mechanisms of prostate cancer risk and identify suitable molecular pathways for targeted therapy.

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Thesis title:

The Role of Retinal Photoreceptors in the Regulation of Circadian Rhythms and Sleep in Systemic Disease

Description:

Retinal photoreceptors provide light signals to regulate the pupil light reflex, circadian photoentrainment and sleep. People with either diabetes or Parkinson's disease experience circadian disruption, but the pathophysiology is not well understood. This thesis demonstrates that in diabetes, dysfunctional outer retinal rod inputs to melanopsin ganglion cells contribute to the sleep disruption. In Parkinson's disease, the dysfunction is at the level of melanopsin ganglion cells, with additional non-selective reductions in retinal contrast gain. These findings identify new retinal pathways contributing to sleep and circadian disruption in people with systemic disease.

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Country: Vietnam

Supervisor/s: Danielle Gallegos (Queensland University of Technology), Toby Pavey (Queensland University of Technology), Pham Tuong (Hanoi Medical University), Nhung Nguyen (National Lung Hospital)

Thesis title:

The Effectiveness of Tailored Dietary Counselling in Treating Malnutrition in Vietnamese COPD Outpatients: A Randomised Controlled Trial

Description:

This research is one of the first trials to evaluate the effectiveness of tailored nutritional counselling in treating malnutrition in outpatients with COPD. Nearly three-quarters of outpatients in Vietnam were identified with malnutrition. This research identified that malnutrition in COPD patients was associated with adverse health outcomes and that tailored nutritional counselling could modify malnutrition status by changing eating behaviours and dietary intake of patients. It emphasized the important role of dietitians in developing appropriate food-based strategies tailored to individual circumstances to promote weight gain, prevent weight loss, improve nutritional status, functional outcomes, and quality of life for COPD patients. While undertaken in Vietnam, the results may be applicable globally with implications of clinical nutrition practice.

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Country: Vietnam

Supervisor/s: Kathleen Finlayson (Queensland University of Technology), Helen Edwards (Queensland University of Technology), Do Thi Ngoc Diep (Ho Chi Minh City Nutrition Center)

Thesis title:

Foot Self-Care among Patients with Diabetes in Vietnam: The Effectiveness of an Education Program to Fill the Self-Care Gap

Description:

This research investigated the effectiveness of a Self-efficacy theory-based foot care education intervention program (3STEPFUN) for Vietnamese patients with diabetes at low risk of developing foot ulceration. A quasi-experimental study was conducted to determine if the intervention improved participants' foot self-care behaviour and foot risk factors for ulceration. The results showed that the 3STEPFUN has potential to prevent minor foot problems which commonly precede diabetic foot ulcers. The research provides important contributions to the current evidence base on diabetic foot ulcer primary prevention in a field where the application of theory-based nurse-administered programs is still limited.

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Country: Vietnam

Supervisor/s: Katherine White (Queensland University of Technology), Marguerite Sendall (Queensland University of Technology), Ross Young (Queensland University of Technology)

Thesis title:

Understanding Binge Drinking Among Medical Students in Viet Nam

Description:

This thesis found binge drinking behaviour was not an extensive problem among Vietnamese medical students but identified various factors and beliefs underlying riskier binge drinking intentions for some students, especially gender, group norms of friends, and role identity as future doctors. Alcohol-related training was an 'add-on' to the Vietnamese current medical curriculum. Stronger educational activities related to alcohol were suggested to consider for future revisions of the medical curriculum. More attention is needed to address the drinking behaviours of doctors, especially surgeons and preventive medicine doctors, and medical students in their transition to becoming future doctors in these specialities.

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Country: Vietnam

Supervisor/s: Karen Theobald (Queensland University of Technology), Carol Windsor (Queensland University of Technology)

Thesis title:

The Positioning of Nurses in Health Care in Vietnam: Interactions, Organisations and Space

Description:

The research extended insight into the national and international contexts of nursing practice in Vietnam. Observations and semi-structured individual interviews were conducted with 29 registered nurses working across a major hospital in Vietnam. At the micro level, nurses produced and reproduced spatial forms to challenge taken for granted practices and an entrenched hierarchy. Yet, nursing reform was constrained by the competing interests of a nationally financed health care labour market and an internationally funded higher education sector. The influence of foreign investment on the health education sector was significant but translated into minimal change at the level of healthcare services.

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Country: Australia

Supervisor/s: Katherine White (Queensland University of Technology), Patricia Obst (Queensland University of Technology), Leanne Hides (Queensland University of Technology)

Thesis title:

The Relationship Between Striving for Muscularity, Masculine Identity, and Steroid Use Among Young Men in Australia

Description:

This thesis contributes to understanding the factors and beliefs underlying the drive for muscularity and associated hazardous behaviours including substance use among young men. This work extends on sociocultural frameworks by examining the role of group identity in the context of psychosocial factors and social influences among young men who have an affiliation with a muscularity-centred subculture. The psychosocial factors identified in this research may inform allied health professionals in the development of education strategies to reduce harm among young men using performance and image enhancing drugs.

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Supervisor/s: Joanne Wood (Queensland University of Technology), Alexander Black (Queensland University of Technology), Kim Delbaere (Neuroscience Research Australia)

Thesis title:

Concern about Falling in People with Age-Related Macular Degeneration

Description:

Concern about falling (CF) is a significant health issue among older people, leading to activity restriction, physical decline, and increased falls risk. Age-related macular degeneration (AMD) is the leading cause of irreversible vision loss among older people, yet little is known about CF in this population. High levels of CF were demonstrated among those with AMD, predicted by reduced visual function, and other physical and psychological factors. Over a 12-month period, CF increased, more so than in general older populations. These results provide an important basis for developing interventions to manage excessive CF, promote activity participation and reduce falls risk.

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Country: Sri Lanka

Supervisor/s: Trudi Collet (Queensland University of Technology), Christopher Collet (Queensland University of Technology), Robert Harding (Queensland University of Technology)

Thesis title:

Thesis information is under embargo.

Description:

Thesis information is under embargo.

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Country: Australia

Supervisor/s: Patricia Yates (Queensland University of Technology), Carol Windsor (Queensland University of Technology)

Thesis title:

A Model of Engagement to Enhance the Capacity of Specialist Cancer Nurses to Support People Living with Lung Cancer to Self-Manage

Description:

Self-management embedded early in the lung cancer pathway improves the quality of life of people living with the disease. However, specialist-level lung cancer nurses have limited guidance on how to best enable people to self-manage. Importantly, social, cultural and personal influences mediate the ways in which these nurses facilitate meaningful interactions with patients. A Vygotskian-inspired model of engagement was developed that asserts that learning occurs during interactions and is constructed around the contextual behaviours and identities of nurses and patients. The model may augment thinking and influence behaviour around self-management education more generally.

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Country: Australia

Supervisor/s: Sherrie-Anne Kaye (Queensland University of Technology), Barry Watson (Queensland University of Technology), James Freeman (University of the Sunshine Coast)

Thesis title:

Investigating the Role of Deterrence in Promoting Road Rule Compliance Among Young Drivers

Description:

This program of research aimed to contribute to reducing the high road trauma rate among young drivers by identifying ways to enhance their compliance with the existing road rules. Specifically, this research refined the application of deterrence theory to road safety and investigated both legal and non-legal factors that influence young driver's road rule compliance, with a focus on speeding, mobile phone use while driving and graduated driver licensing restrictions. The results present a number of theoretical implications for deterrence theory and practical implications for road safety.

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Country: Cote d'Ivoire

Supervisor/s: Narelle Haworth (Queensland University of Technology), Mark King (Queensland University of Technology), Ashim Debnath (Deakin University), Darren Wishart (Australian Road Research Board)

Thesis title:

Towards an Understanding of Financial Influences on Heavy Vehicle Safety Outcomes

Description:

This thesis sought to better understand how financial pressures influence the safety of heavy truck operations in Australia. Truck driver employment (direct and outsourced) and payment methods influenced the risk of crashes and unsafe driving behaviours, and were in turn associated with companies' perceptions of their financial performance. Improved training in financial management and monitoring of financial performance could be effective approaches to improving safety of both freight transport and those who share the roads with heavy trucks.

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Description:

Thesis information is under embargo.

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Country: Australia

Supervisor/s: Renata Meuter (Queensland University of Technology), Julia Hocking (Queensland University of Technology)

Thesis title:

Exploring Language-Discordant and Concordant Practitioner-Patient Communication in the Australian Health Context

Description:

Communicating about health concerns is prone to misunderstandings, and more so when patients and practitioners do not share the same first language. Using in-depth qualitative analyses of hospital-based language concordant and discordant consultations, this thesis revealed those communication behaviours displayed interactively between patients and practitioners that ensure quality communication. Critical amongst these are the practitioner's patient-centredness, conversation management, cultural awareness, and responsiveness to their patients' communication style, and the patients' communication and engagement. The findings informed the extension of Communication Accommodation Theory towards the more comprehensive study of health communication, and generated recommendations for improving practitioner and patient communication.

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Supervisor/s: Kerry-Ann O'Grady (Queensland University of Technology), Dimitrios Vagenas (Queensland University of Technology), Steven Mcphail (Queensland University of Technology), Anne Chang (Queensland University of Technology), Michael Otim (University of Sydney)

Thesis title:

Burden of Respiratory Illnesses with Cough in Children From an Economic and Quality of Life Perspective, and the Cost-effectiveness of Early Intervention

Description:

This thesis used data from four studies to quantify the burden of respiratory illnesses with cough on Australian children from an economic and quality of life perspective. The findings demonstrate the substantial impact respiratory illnesses among children have on families and health services. The findings emphasise the need for cost-effective strategies to prevent and manage respiratory illness on both the clinical and population level.

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Country: China

Supervisor/s: Wenbiao Hu (Queensland University of Technology)

Thesis title:

Using Big Data to Enhance Pertussis Surveillance and Response in Shandong Province, China

Description:

Pertussis imposes a substantial global health burden and has been reported to resurge over the next few years in many countries. The thesis used big data to predict pertussis infection in Shandong province, China. The research quantified the associations of internet query data and socio-environmental factors with pertussis infection and developed spatial and temporal predictive models based on big data. The findings of the thesis may enhance traditional pertussis surveillance and response via the development of an early warning system based on big data.

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Country: Australia

Supervisor/s: Ann Bonner (Queensland University of Technology), Clint Douglas (Queensland University of Technology)

Thesis title:

A Bundled Phosphate Control Intervention (4Ds) for Adults with End Stage Kidney Disease Receiving Haemodialysis: A Cluster Randomised Controlled Trial

Description:

Hyperphosphataemia occurs in end-stage kidney disease and is managed by diet, drinks, drugs, and dialysis. Adherence to the 4Ds is challenging for patients. This thesis reports a pragmatic randomised controlled trial that evaluated the effectiveness of an innovative educational intervention 'Taking control of your phosphate with the 4Ds' to improve adherence to phosphate control in adults receiving haemodialysis. The 4Ds, a bundled self-management intervention, was effective in improving patient's confidence about phosphate control methods. Importantly, the intervention was brief and feasible for nurses to deliver during haemodialysis treatment.

Introduction

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Country: Australia

Supervisor/s: Vivienne Tippet (Queensland University of Technology), Peter Aitken (Queensland University of Technology)

Thesis title:

Preparing Australian Paramedics for Effective Health Disaster Response: Identifying Core Competency and a Phenomenographic Examination of Current Disaster Response Education

Description:

The education and training of paramedics in disaster response is an essential part of preparedness within the disaster management cycle. While it is clear that disaster and major incident capabilities may differ depending on location, disasters in any state of Australia can potentially require a national response. As such, those paramedics responding to these events should have the same standardised core knowledge, competency and ability. This project utilised a convergent mixed-method approach to analyse four discrete studies designed to examine the current state of disaster response education for Australian first responder paramedics and to make recommendations for future improvement.

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Supervisor/s: Bridget Harris (Queensland University of Technology), Helen Berents (Queensland University of Technology), Kerry Carrington (Queensland University of Technology)

Thesis title:

Preventing Teenage Intimate Partner Violence: Advocate Perceptions of Education Programs in the Global South

Description:

This thesis is a case study of advocate perceptions of education programs for preventing teenage intimate partner violence (IPV) in the Global South. It examines how advocates seek to prevent teenage IPV, what prevention strategies they recommend, and what factors shape their initiatives. This work uses a critical discourse analysis of existing policy and 14 semi-structured interviews guided by thematic analysis. In doing so, this thesis contributes to addressing the scarcity of studies on teenage IPV prevention, particularly in the Global South, and contributes to giving a voice to advocates in the field.

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Supervisor/s: Nigel Stobbs (Queensland University of Technology), Kelly Richards (Queensland University of Technology)

Thesis title:

Gladue, Bugmy and 'Special Treatment' - Reconciling a Proposal for Sentencing Law Reform in Queensland with s.10 of the Racial Discrimination Act 1975 (Cth)

Description:

This thesis compares how Indigenous offenders are sentenced in Canada and Australia. In Canada, judges must give particular attention to the circumstances of Indigenous offenders. However, in Australia there is no such statutory requirement. Indeed, the High Court of Australia has queried whether such a requirement - at state level - would be consistent with the Racial Discrimination Act 1975 (Cth). The thesis argues that the Queensland legislature could pass such a sentencing law and that it would be consistent with the Racial Discrimination Act 1975 (Cth).

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Supervisor/s: Kylie Pappalardo (Queensland University of Technology), Matthew Rimmer (Queensland University of Technology)

Thesis title:

The Theft of Culture and Inauthentic Art and Craft: Australian Consumer Law and Indigenous Intellectual Property

Description:

This thesis addresses the 2017 Parliamentary Inquiry into the 'growing presence of inauthentic Aboriginal and Torres Strait Islander 'style' art and craft products and merchandise for sale across Australia'. Inauthentic art and craft is Aboriginal 'style' souvenir products that are created without the involvement of an Aboriginal person. This thesis prioritises the evidence of Aboriginal and Torres Strait Islander people to the 2017 Inquiry, investigates intellectual property and consumer law and explores colonial influences and power dynamics that allow inauthentic art and craft to exist. This thesis answers the question: 'How can the law protect Aboriginal cultural expression from exploitation?'

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Supervisor/s: Mark Lauchs (Queensland University of Technology), Carmel O'Sullivan (Queensland University of Technology)

Thesis title:

Tactics - Analysed and Described

Description:

This thesis analyses and describes tactics in resolution of conflict. The relationship and delineation between strategy and tactics, both being inherent to conflict, is poorly articulated. Consequently, tactics are inadequately defined, understood and applied. They are frequently confused with physical application of a technique rather than addressing the psychology and science inherent in decision attainment. This definitional inadequacy results in actions that are neither efficient, effective or ethical. Tactics are determined to be not only decision making but the attainment and sustaining of the decision sought in keeping with higher order intentions and constraints in conflict situations.

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Supervisor/s: Nicolas Suzor (Queensland University of Technology), Anna Huggins (Queensland University of Technology), Patrik Wikstrom (Queensland University of Technology)

Thesis title:

The Rule of Law in Platform Governance: An Empirical Evaluation of the Moderation of Images Depicting Women's Bodies on Instagram

Description:

This thesis empirically evaluates the moderation of images depicting women's bodies on the social media platform Instagram against the Anglo-American ideal of the rule of law. By developing and applying an innovative black box methodology, based on an input/output method that fuses legal theory with digital methods, this study helps to answer calls for data that can clarify content moderation in practice. Overall, this thesis identifies a concerning trend of inconsistent moderation across two cases studies (5,924 images in total), ultimately contributing to global debate around the risk of arbitrariness in platform governance and the broader project of digital constitutionalism.

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Supervisor/s: John Scott (Queensland University of Technology), Mark Lauchs (Queensland University of Technology), Melissa Bull (Queensland University of Technology)

Thesis title:

Governing Cannabis Highs and Harms: Australia's Neoliberal Harm Minimisation Illicit Drugs Framework

Description:

This thesis applies Bacchi's (2009; 2016) policy analysis framework, to Australian illicit drug policy texts (1985-2017) to interrogate exercises of power in illicit drug policy. Findings reveal the dominance of legal and health/well-being discourses which produce the body as a site of self-governance ('responsibilisation'), while epidemiological narratives narrow the cannabis 'problem' and omit why cannabis is used for recreation. Failure to resolve the historical influence of morality associated with public health rationalities and their intersection with law and order has meant that harm minimisation, which empowers citizens through the governance of self, is constrained by sovereign power.

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Supervisor/s: Mark Lauchs (Queensland University of Technology), Susan Fuller (Queensland University of Technology), Reece Walters (Deakin University)

Thesis title:

Understanding Perceptions of Human-Wildlife Conflict and Policy Responses: An Examination of the Western Australia Shark Hazard Mitigation Drum Line Program 2013 - 2014

Description:

This thesis examines stakeholder perceptions of shark bite events and policy responses by using a Western Australian shark hazard mitigation policy as a case study. It determined that stakeholder groups use different techniques to create social problems that can influence policy outcomes and that there is a disconnect between policy and scientific evidence regarding cases of human-wildlife conflict.

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Supervisor/s: Jodi Death (Queensland University of Technology), Kelly Richards (Queensland University of Technology), Belinda Carpenter (Queensland University of Technology)

Thesis title:

Child Sexual Abuse and the Australian Roman Catholic Church: Using Techniques of Neutralisation to Examine Institutional Responses to Clergy-Perpetrated Child Sexual Abuse

Description:

Clergy-perpetrated child sexual abuse has emerged as a critical issue on the global stage, demanding widespread public attention and encouraging scrutiny of institutions like the Roman Catholic Church. This thesis uses the theoretical framework of techniques of neutralisation to explore how the Roman Catholic Church as an institution responds to cases of clergy-perpetrated child sexual abuse, and how that response changes over time, through the examination of two case studies - the Ellis case, and the Foster Family case.

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Country: Australia

Supervisor/s: Lindy Willmott (Queensland University of Technology), Gerard Fitzgerald (Queensland University of Technology), Benjamin White (Queensland University of Technology)

Thesis title:

Patient refusal of paramedic treatment: Promoting paramedic decision making through use of a legal framework to assess the validity of refusals in the pre-hospital setting

Description:

This research quantitatively examined the frequency, clinical circumstances and demographic characteristics of patients that refuse paramedic treatment; contextually reviewed the regulatory framework in which these decisions are made; critically evaluated paramedics' knowledge and application of the law when responding to patients who refuse treatment; and identified discrepancies that exist between the law and paramedic practice. The findings of this study will inform, guide and promote paramedic decision-making through use of a legal framework when responding to patients that refuse treatment and transport against advice.

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Supervisor/s: Lindy Willmott (Queensland University of Technology), Benjamin White (Queensland University of Technology)

Thesis title:

Navigating Conflicts about Life-Sustaining Treatment in a Health System with Limited Resources: Reconciling Law, Policy and Practice

Description:

This thesis is the first study of how Australian laws and policies address tensions between patient and societal interests in decisions to forgo life-sustaining treatment for critically ill adults. Using a combination of qualitative interviews, legal doctrinal research, and qualitative content analysis, the thesis evaluates these regulatory instruments against doctors' perceptions of practice. The thesis argues that existing laws and policies need reform to support more transparent decisions that recognise resource constraints can be relevant to end-of-life decisions. In particular, laws and policies should support doctors to distinguish between patient interests and distributive justice as two separate rationales for non-treatment.

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Supervisor/s: Rachael Field (Queensland University of Technology), James Duffy (Queensland University of Technology)

Thesis title:

Representing Effective Communication and Plain Language in Legal Contexts: A Critical Discourse Study

Description:

This thesis explores problems with legal communication as a social problem in which discourse and the shared beliefs of groups play a crucial role. It concludes that plain language is a problematic construct in the law because there are costs of systematically misrepresenting an intention to communicate effectively as the solution to a complex set of social and legal issues. The study generates new practical theory that has potential to transform practice by raising awareness of the extent to which shared beliefs about legal language, plain language and effective legal communication are reconstructed in everyday discourse.

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Supervisor/s: Colin Anderson (Queensland University of Technology), Danielle Bozin (Queensland University of Technology), Rosalind Mason (Queensland University of Technology)

Thesis title:
University Law: Pursuing Fruits of Knowledge

Description:

This thesis examined the role played by enabling legislation in requiring Australian public universities to govern and undertake their core functions in the public good. The research identified statutory mechanisms, including the legal status, legal capacities and governance obligations, which shape and colour the form and substance of universities as institutions of public good. The public good requirements embedded in the enabling legislation equates to the public benefit. The enabling legislation compel Australian public universities, as charitable higher education corporations, to act, through their governing bodies, in the public interest to advance higher education and research for the public benefit.

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Supervisor/s: Benjamin White (Queensland University of Technology), Lindy Willmott (Queensland University of Technology), Shih-Ning Then (Queensland University of Technology)

Thesis title:

Capacity, Voluntariness and Mental Illness: Using Mental Health Advance Directives to Promote Autonomy

Description:

This thesis conducts a comparative study of how advance directives for treatment for mental illness are regulated in Australia. It considers whether the legal prerequisites for making a mental health advance directive ? capacity and voluntariness ? are effective in promoting autonomy in decision-making by people with mental illness. It concludes that they are overly focussed on rationality and external controlling factors, and proposes reform of the current legal framework to also recognise the impact of internal controlling factors (such as delusional false beliefs, serious mood distortions and disorders of valuation) on decision-making.

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Country: Australia

Supervisor/s: Erin O'Brien (Queensland University of Technology), Russell Hogg (Queensland University of Technology), Belinda Carpenter (Queensland University of Technology)

Thesis title:

The Politics of Privacy Protection: An Analysis of Resistance to Metadata Retention and Encryption Access Laws

Description:

This thesis examines the politics of privacy protection, focusing on how privacy advocates contest a moral equivalence at the core of the 'problem of going dark' - a claim that privacy-enhancing technologies enable the evasion of criminal investigations. Using the analytical constructs of signification, subjectivation, and identification, the thesis argues that Australian privacy advocates contest this claim via the articulation of a civic duty to disrupt the relations of domination that enable 'morally arbitrary' surveillance powers. Overall, the thesis argues this property of 'moral arbitrariness' is important for clarifying the distinction between advocating privacy protection and enabling methods of criminal evasion.

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Supervisor/s: Matthew Rimmer (Queensland University of Technology), Richard Johnstone (Queensland University of Technology)

Thesis title:

Community-Based Patent Opposition Model in India: Access to Medicines, Right to Health and Sustainable Development

Description:

Jeffrey Sachs' conceptions of enlightened globalization and directed technological change are relevant to patent law and access to medicines in India. This study was original in translating these concepts into a concrete and integrated package of patent law and policy reform proposals for India. This study presented new empirical data and undertook statistical analysis of India's patent opposition model. In light of Sachs' ideas, this project proposed a community-based patent opposition model as a novel solution complemented by other measures and policies like need-driven collaborative open innovation, community-backed use of patent flexibilities, and rights-based approach to health and sustainable development.

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Supervisor/s: Bridget Lewis (Queensland University of Technology), Rowena Maguire (Queensland University of Technology)

Thesis title:

Framework for Climate Migration Readiness for Fiji for Relocation of Pacific Islanders to Fiji

Description:

The central question the thesis asks is how ready is the Fijian Government to respond to climate-induced cross border relocation of the Pacific Island communities from Kiribati and Tuvalu to Fiji? The thesis synthesises and analyses different sources of data to conceptualise and articulate a set of criteria for readiness that has not been explained elsewhere in the literature for climate change migration readiness. Extensive work remains for Fiji to meet the readiness criteria, which encompass: the role of law for cross-border relocation, institutional capacity, coordination, land availability, funding, a whole-of-community orientation, and the maintenance of cultural identity in the planning and implementation phases of cross-border relocation.

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Supervisor/s: William Dixon (Queensland University of Technology), Leon Wolff (Queensland University of Technology), Colin Anderson (Queensland University of Technology)

Thesis title:

Measuring the Cultural Fit of Corporate Governance Transplants in Asia

Description:

Transplantation is a common form of law reform. Countries often borrow from one another to rectify a deficiency or problem in their own laws. Whether a transplant can 'take' or be successful in the recipient country depends on numerous factors. The objective of this thesis proposed a parsimonious desktop model in which the cultural fit between the transplant, donor sources and recipient countries were quickly ascertained and analysed by drawing on findings in cross cultural psychology and culturally relevant prompts. The model was applied to four case studies in Asia.

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Country: Pakistan

Supervisor/s: Andrew Garwood-Gowers (Queensland University of Technology), Bridget Lewis (Queensland University of Technology)

Thesis title:

Freedom of Expression and the Criminalisation of Online Glorification of an Offence: A Case Study of Pakistan

Description:

Thesis information is under embargo until 27 April 2022.

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Country: Australia

Supervisor/s: Benjamin Mathews (Queensland University of Technology), Shih-Ning Then (Queensland University of Technology), Malcolm Smith (Queensland University of Technology)

Thesis title:

Legal Barriers to Consent for Medical Treatment of Trans and Gender Diverse Youth: A Comparative and Medico-Legal Analysis

Description:

Legal and clinical complexities continue to develop surrounding medical treatment for trans and gender diverse youth in Australia. This thesis employed a comparative and medico-legal lens to evaluate the law in Australia against medical knowledge regarding consent to treatment of trans and gender diverse youth. These analyses determined whether Australian law is congruent with medical science, and whether law reform is needed. The law in England and Wales was also analysed to determine whether any differences may inform Australian law reform. The thesis drew conclusions for law reform and optimal clinical practice for trans and gender diverse youth.

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Country: Australia

Supervisor/s: John Scott (Queensland University of Technology), Benjamin Mathews (Queensland University of Technology), Kelly Richards (Queensland University of Technology)

Thesis title:

Reporting Clergy Sexual Misconduct Against Adults to Roman Catholic Church Authorities: An Analysis of Survivor Perspectives

Description:

This qualitative study sought to explore and describe the self-reporting experiences of victims/survivors of clergy sexual misconduct against adults (CSMAA) within the Australian Roman Catholic Church (RCC). These under-researched experiences were then compared with Anson Shupe's theory of clergy malfeasance and its modes and tactics of neutralisation used against those who expose institutional deviance and corruption. The findings were that while, superficially, victims/survivors were positively responded to in some way, for the most part, these adult victims are actually viewed with suspicion, mainly because of their age. Accordingly, victims/survivors experienced further traumatisation, often more impactful than the initial abuse.

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Thesis title:

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Description:

Thesis information is under embargo.

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Country: Australia

Supervisor/s: Lindy Willmott (Queensland University of Technology), Benjamin White (Queensland University of Technology)

Thesis title:

The Regulation of Commercial Surrogacy in Australia: A Harm Analysis

Description:

This thesis analyses the harm unique to commercial surrogacy, concluding that the prohibition of commercial surrogacy in Australia is not justified. It critiques the regulation of commercial surrogacy in Australia against a framework based on Mill's Harm Principle which holds that the only justification for intervention into the lives of individuals is for the prevention of harm to others.

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Supervisor/s: Marie-Luise Wille (Queensland University of Technology), Wageeh Boles (Queensland University of Technology), Christian Langton (Queensland University of Technology), John Grant-Thomson (BAC Technologies)

Thesis title:

SmartPhone Ultrasound Imaging

Description:

This research project titled 'Smartphone Ultrasound Imaging' aimed to develop an affordable, portable and single handed ultrasound-imaging device to be used in hospitals, developing world nations as well as rural and remote Australia. This study examined the feasibility of combining a conventional smartphone with an ultrasound probe into one single device. All necessary ultrasound signal processing components were built and smartphone applications were developed to successfully transmit data either via Bluetooth or Wi-Fi from the ultrasound to the smartphone.

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Supervisor/s: David Murphy (Queensland University of Technology), Charlotte Allen (Queensland University of Technology)

Thesis title:

The Petrogenesis and Geochronology of Lower Crustal Xenoliths from the Georgetown Inlier, North Queensland

Description:

The only method of sampling the present day lower continental crust is through volcanic eruptions that transport samples of country rock to the surface. The composition, mineralogy, and age of three lower crustal xenoliths were examined from a preserved volcanic edifice, Hill 32, which erupted in North Queensland. It was found that all three samples represented former feldspathic orthogneisses. Through zircon U-Pb geochronology, the samples were found to have been subject to intense metamorphism and anatexis melting approximately 260Ma. Through rutile U-Pb geochronology, the eruption of Hill 32 in North Queensland was quantitatively dated to have erupted 1.5Ma.

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Supervisor/s: Robyn Araujo (Queensland University of Technology), Pamela Burrage (Queensland University of Technology)

Thesis title:

Mathematical Modelling of Ultrasensitivity in Enzyme-Mediated Reactions

Description:

This thesis presents a thorough mathematical investigation of the important phenomenon of Ultrasensitivity in enzyme-mediated chemical reaction networks. The study considers several novel chemical reaction networks, and develops a robust new nomenclature that allows Ultrasensitivity to be analysed in precise quantitative terms. This investigation encompasses both stochastic and deterministic simulations, as well as analytical methods, which together provide a comprehensive understanding of ultrasensitivity-promoting mechanisms in simple chemical reaction networks.

Introduction

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Supervisor/s: Darren Pearce (Queensland University of Technology), Giampaolo Manzolini (Polytechnic University of Milan), Stefan Wilbert (German Aerospace Center), Theodore Steinberg (Queensland University of Technology)

Thesis title:

Performance Evaluation of a Soiling Degradation Model and Investigation of Corrosion Rate on CST Receivers

Description:

This thesis addresses the current lack of quality control tools available to assess solar spectral irradiance measurements. Spectral measurements are very data rich and can be overwhelming to manually check. The purpose of this project was aimed towards developing a solar spectra data screening method and ultimately create an automated quality control and assurance tool. Measured spectra were assessed as good or bad by comparing them to the spectral model AeroSMARTS. Efficacy of the novel methodologies was demonstrated by cross comparison with a manually screened reference dataset.

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Supervisor/s: Christopher Drovandi (Queensland University of Technology), Adam Clements (Queensland University of Technology)

Thesis title:

Efficient Bayesian Estimation for GARCH-Type Models via Sequential Monte Carlo

Description:

This thesis develops a new and principled approach for estimation, prediction and model selection for a class of challenging models in econometrics, which are used to predict the dynamics of the volatility of financial asset returns. The results of both the simulation and empirical study in this research showcased the advantages of the proposed approach, offering improved robustness and more appropriate uncertainty quantification. The new methods will enable practitioners to gain more information and evaluate different models' predictive performance in a more efficient and principled manner, for long financial time series data.

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Supervisor/s: Dietmar Hutmacher (Queensland University of Technology), Beat Schmutz (Queensland University of Technology), Siamak Saifzadeh (Queensland University of Technology), Nathan Castro (University of Maryland)

Thesis title:

Development of a novel Voronoi structured scaffold for critical-size bone defects

Description:

Over the last decade, technological development has led to a revolution in the treatment of bone injuries. Few technologies hold more promise than 3D printing of biological material, which includes the field of bone science. This dissertation focused on 3D printed biodegradable scaffolds by using a novel Voronoy structured scaffold for critical-size bone defects that follows the definitions defined by mathematician Georgy Voronoy. These offer innovative healing opportunities for patients experiencing large bone defects, induced either by accidental or pathological causes, to regenerate the damaged tissues by using a scaffold as a structural skeleton for cell interaction and mechanical stability.

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Thesis title:

Thesis information is under embargo.

Description:

Thesis information is under embargo.

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Supervisor/s: Thierry Peynot (Queensland University of Technology), Michael Milford (Queensland University of Technology), Paul Lever (CRCMining)

Thesis title:

Evaluating the Effect of Illumination on the Performance of Visual Odometry in Underground Mining Environments

Description:

Visual Odometry (VO) is a localisation technology that has many potential benefits for the mining industry. However, the performance of VO degrades in challenging lighting conditions such as underground mines. This study evaluated the effect of key illumination strategies (the spatial position, spatial distribution and directional properties of light) on the performance of VO using real-world evaluation data. The results showed that the illumination strategies affected the performance of VO. The most significant impact (an improvement in accuracy and reliability of 71% and 70% respectively) was observed by increasing the distance between the light sources and the camera.

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Supervisor/s: Scott Mccue (Queensland University of Technology), Timothy Moroney (Queensland University of Technology), Ian Turner (Queensland University of Technology)

Thesis title:

An investigation of mathematical models for spray droplet spreading on plant leaves with new results applicable to uniform, horizontal, solid surfaces

Description:

This thesis presents a literature review of mathematical models developed to simulate the spreading of agrichemical spray droplets impacting on plant leaf surfaces. New results are derived to predict how far droplets will spread when deposited or sprayed perpendicularly onto a dry, uniform, horizontal, solid surface. The first part of the new research provides equations to predict the extent a sessile droplet will spread on these surfaces as well as its itemized energy budget. The second part examines scaling law formulae to predict the maximum spreading factor for droplets impacting the solid at non-zero velocities.

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Country: Australia

Supervisor/s: Christopher Drovandi (Queensland University of Technology), Gentry White (Queensland University of Technology), Robert Kohn (University of New South Wales)

Thesis title:

Bayesian Inference for Stochastic Differential Equation Mixed Effects Models

Description:

Stochastic differential equation mixed effects models (SDEMEMs) are increasingly used in biomedical and pharmacokinetic/pharmacodynamic research. However, the complexity of these models means that previous research has focussed on approximate parameter estimation methods. This thesis develops three novel Bayesian parameter estimation methods for SDEMEMs. The new methods can produce parameter estimates that are more accurate and provide more reliable uncertainty quantification. The new methods are applied to both real and simulated data from a tumour xenography study on mice.

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Supervisor/s: Christopher Drovandi (Queensland University of Technology), Anthony Pettitt (Queensland University of Technology)

Thesis title:

Efficient and Flexible Bayesian Synthetic Likelihood via Transformations

Description:

Simulator models are a type of stochastic model that is often used to approximate a real-life process. Current statistical methods for simulator models are computationally intensive, relying on a large number of model simulations. In this thesis, we develop new, efficient and flexible statistical methods that can be used for complex statistical models, such as simulator models. The new methods are theoretically justified and applied to a variety of simulated and real-life modelling scenarios from ecology and biology.

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Supervisor/s: Laura Bray (Queensland University of Technology), Adalbert Meinert (Queensland University of Technology)

Thesis title:

Development of a Bioengineered Microvascular In Vitro Model

Description:

This thesis focuses on the development of methods to create stable microvascular structures using miniaturised devices containing microchannels and water-swollen networks known as hydrogels. The combination of miniaturised devices and hydrogels provide a platform to recreate key aspects of human tissues and organs in a laboratory setting. It examines different hydrogel materials and their capacity to facilitate microvascular network formation. It also introduces a novel concept termed 'on-demand matrix reinforcement' to stabilise vascular structures in generating long term microvascular studies.

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Supervisor/s: Haifei Zhan (Queensland University of Technology), Yuantong Gu (Queensland University of Technology)

Thesis title:

Development of Mechanically Enhanced Polycaprolactone (PCL) Composites Silane - Functionalized Titanate Nanofiller for Melt Electrowriting in 3D Printing

Description:

This thesis designed and tested a series of titanate nanofillers enhanced polycaprolactone (PCL) composites. The significance of the homogeneity of the nanofiller in terms of printability and mechanical strength were evaluated. By grafting functional groups, the nanofiller surface has shown an improved hydrophobicity, which improved their dispersion in the PCL matrix. Therefore, the addition of functionalized nanofillers has not only enhanced the mechanical properties of the composites but has also made the composites 3D printable. Besides, the PCL composites have shown minimal cell toxicity indicating a great potential in the field of customized 3D printing for biomedical applications.

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Supervisor/s: Timothy Dargaville (Queensland University of Technology), Nathalie Bock (Queensland University of Technology), Aurelien Forget (Albert Ludwig University of Freiburg), James St John (Griffith University)

Thesis title:

Peptide Functionalised Hydrogels for Tissue Regeneration

Description:

This project aimed to develop a therapeutic intervention to decrease scarring and encourage regeneration following spinal cord injury. For this purpose, in vitro 3D microenvironment comprising Olfactory ensheathing cells (OECs) encapsulated in peptide functionalised hydrogels were synthesized using a robot. To optimise the hydrogel system a library of peptides was screened from which different hydrogel formulations were identified to support cell adhesion, proliferation and migration. With this approach an ideal 3D hydrogel system for future in vivo testing will be developed and ultimately clinical translation. In addition, a 3D in vitro model simulating a nerve guidance channel and a biosensor for detecting oxidative stress was also studied to understand the behaviour of OECs in in vitro cell culture systems.

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Supervisor/s: Haifei Zhan (Queensland University of Technology), Yuantong Gu (Queensland University of Technology)

Thesis title:

High Throughput Modelling of Chiral Carbon Nanothread Bundles

Description:

This thesis examines the torsional behaviour of chiral carbon nano-fibres and their bundle structures. The evidence from high throughput modelling shows that the torsional mechanics of chiral carbon fibres depend on both loading direction and the extensional pre-strain, and the torsional behaviour of their bundle structures can be modified by adjusting the ratio of enantiomers. The study provides a useful reference for the materials' application in electromechanical systems and energy storage field.

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Supervisor/s: Judith Little (Queensland University of Technology), Peter Pivonka (Queensland University of Technology), Caroline Grant (Queensland University of Technology)

Thesis title:

Spinal Deformity Correlations with the Use of EOS Imaging in Adolescent Idiopathic Scoliosis Patients Undertaking Brace Management

Description:

This study investigated the function of spinal bracing in treating Adolescent idiopathic scoliosis (AIS). Using bi-planar imaging (EOS), a three-dimensional assessment of how the brace achieves correction of the spinal deformity was performed utilizing the SterEOS software. Across all scans, the immediate angular correction achieved with bracing appeared modest in the coronal plane. The results suggested no significant change in axial vertebral rotation. Over sequential episodes there appeared no significant progression of deformity parameters. Bracing of scoliosis patients appeared therefore to have been universally effective across this cohort, though not in the anticipated manner of significant immediate correction.

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Supervisor/s: Robert Speight (Queensland University of Technology), Peter Strong (Queensland University of Technology)

Thesis title:

Optimisation of a Hydrolysed Collagen Production Process from Heat-Treated Bovine Bone Based on Acid and Enzymatic Proteolysis

Description:

This project aimed to optimise a process for the production of hydrolysed collagen from livestock bones. Current commercial hydrolysed collagen production processes from bones are energy intensive and generate large amounts of chemical waste, which can be harmful to the environment or costly to treat. The process developed in this work achieved lower levels of chemical waste, generated a by-product with commercial potential (calcium diphosphate for animal feed) and showed high yields of hydrolysed collagen that met commercial product specifications.

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Country: Australia

Supervisor/s: Kerrie Mengersen (Queensland University of Technology), Earl Duncan (Queensland University of Technology), Dianne Cook (Queensland University of Technology)

Thesis title:

New Algorithms for Effectively Visualising Australian Spatio-temporal Disease Data

Description:

This thesis contributes to improvements in effectively communicating population related cancer distributions and the associated burden of cancer on Australian communities. This thesis presents a new algorithm for creating an alternative map displays of tessellating hexagons. Alternative map displays can emphasise statistics in countries that contain densely populated cities. It is accompanied by a software implementation that automates the choice of one hexagon to represent each geographic unit, ensuring the statistic for each is equitably presented. The case study comparing a traditional choropleth map to the alternative hexagon tile map contributes to a growing field of visual inference studies.

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Supervisor/s: Matthew Simpson (Queensland University of Technology), Pascal Buenzli (Queensland University of Technology)

Thesis title:

A Novel Free Boundary Mathematical Model of Epithelial Tissues with Mechanobiological Coupling

Description:

Epithelial tissues are known to deform in response to chemical signals and mechanical forces or due to trauma, such as tumours and wounds. In this thesis, a novel free boundary mathematical model of epithelial tissues with mechanobiological coupling is developed to study how the deformation of epithelial tissues impacts tumour growth and wound healing. Mechanobiological coupling is introduced in a discrete modelling framework and new reaction-diffusion equations are derived. Case studies involving the Rac-Rho pathway and activator-inhibitor patterning demonstrate that the reaction-diffusion equations accurately reflect the biological processes included in the discrete model.

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Country: Australia

Supervisor/s: Jessica Trofimovs (Queensland University of Technology), David Murphy (Queensland University of Technology), Patrick Hayman (Queensland University of Technology)

Thesis title:

Timing and Basin Implications for the Eden-Comerong-Yalwal Volcanic Zone: Stratigraphy, Depositional Environment and Tectonic Affinity of the Comerong Volcanic Complex, NSW

Description:

This project investigated an ancient volcanic field in southern NSW to further understand the geological formation of eastern Australia. It examined the timing, chemistry and paleoenvironment of the Comerong Volcanic Complex, situated in the Budawang National Park, NSW. The project used field mapping to record the physical volcanology and to collect representative samples. The samples were then tested for their chemistry by using X-Ray Fluorescence spectrometry and dated using U-Pb isotopic age dating techniques. This study showed the volcanism occurred in the Middle Devonian and was erupted as lava flows and pyroclastic density currents into an intraplate rift setting.

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Country: China

Supervisor/s: Robert Speight (Queensland University of Technology), Pawel Sadowski (Queensland University of Technology), Stephen Blanksby (Queensland University of Technology)

Thesis title:

Compositional analysis of new microbial feed supplements produced from meat processing co-products

Description:

This research aimed to develop and validate new effective analytical methods for microorganism-derived livestock feed supplements. Qualitative as well as quantitative analyses of important nutrient profiles in the microbial products, such as lipids and polar metabolites, were included in this study. Detailed amino acid and lipidomic analyses were performed to obtain nutrient profiles of different microorganisms grown using low-cost media derived from livestock waste. The knowledge and results gathered from this study have contributed to the development and evaluation of a rapid analytical method for nutrient profiling of new microorganism-derived feed supplements.

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Country: Australia

Supervisor/s: Duzgun Agdas (Queensland University of Technology), Timothy Rose (Queensland University of Technology)

Thesis title:

An Analysis of Transaction Cost in Infrastructure Projects

Description:

This research is designed to closely analyse the transaction cost associated with the construction and/or maintenance of infrastructure and mining projects. When the transaction cost is not clearly defined, it can either leave out essential costs, which should have been part of the transaction cost, or include unnecessary costs. This will provide false data to the owner and the analysis in these scenarios can be misleading. The research endeavoured to study the impact of bundling, wherein various small contracts or sections/portions of work are combined and the optimum bundling point existence. The results validate the suppositions of this research.

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Supervisor/s: Yuantong Gu (Queensland University of Technology), Noyel Thibbotuwawa (Queensland University of Technology), Travis Klein (Queensland University of Technology), Sanjleena Singh (Queensland University of Technology)

Thesis title:

Age and Location - Dependent Biomechanical Properties of Kangaroo Shoulder Cartilage

Description:

This study attempts to explore the age- and location-dependent mechanical properties, compositional and structural features of shoulder cartilage, using kangaroo shoulder cartilage as a model. The indentation tests and microscopic investigations explain the biomechanical properties and its relationship with compositional and structural features of shoulder cartilage, which has provided hints on how shoulder cartilage adapts to different loadings within the joint, and how the shoulder cartilage grows and degrades with age. Further, the study provides a framework for study of location- and age-dependent biomechanical properties of shoulder cartilage.

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Supervisor/s: Paul Corry (Queensland University of Technology), James McGree (Queensland University of Technology)

Thesis title:

Exact & Approximate Optimisation For Strategic Bus Network Planning

Description:

This thesis contributes to the area of transportation network design at the strategic level, considering objectives for the passenger and operator. The main goal of the research is to improve the existing methods by developing new and more rigorous approaches to integrating route choice, service frequency and adequately accounting for passenger waiting time. An exact model was developed: providing a concise non-ambiguous description to the problem. Case study problem instances found that exact methods implemented by commercial solvers are not scalable for practical problems. Therefore, meta-heuristics were presented to find near-optimal solutions efficiently and demonstrate the practicality of the model in the real-world.

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Supervisor/s: Wasana Bandara (Queensland University of Technology), Erica French (Queensland University of Technology), Paul Mathiesen (Queensland University of Technology)

Thesis title:

Conceptualising Stakeholder Engagement in Business Process Management Initiatives

Description:

It's widely acknowledged that the identification and engagement of stakeholders is a critical success factor for Business Process Management (BPM). Despite this, to date there has been a limited and inconsistent approach to stakeholder identification and scant attempts to holistically identify the factors which impact their engagement. This research addresses these gaps, presenting two models. The first model is a BPM stakeholder model designed to identify and enumerate all important stakeholders. The second model presents a holistic, systems-view of the factors influencing stakeholder engagement. Both models synthesises existing knowledge and provides empirical support from an in-depth case study.

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Supervisor/s: Gregory Timbrell (Queensland University of Technology), Michael Rosemann (Queensland University of Technology)

Thesis title:

Conceptualising trust as a data-driven attribute in a study of supply chain relationships

Description:

This research explored supply chain trust in the context of blockchain food exports and determined that data-driven trust is a key concept in establishing and maintaining high system-level and individual-level trust across all entities.

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Supervisor/s: Geoffrey Kent (Queensland University of Technology), Dhaval Vyas (Queensland University of Technology)

Thesis title:

Utilising Human Computer Interaction Evaluation Techniques to Improve Sugar Cane Transportation

Description:

This thesis presents an application of Human Computer Interaction methodology in the testing of a suitable interface for sugar cane rail transportation software within an existing transport management tool. The method used in this thesis measured how user friendly the interface was based on interactions and feedback supplied from sugar cane rail transport traffic controllers.

Introduction

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Supervisor/s: Gerard Ledwich (Queensland University of Technology), Geoffrey Walker (Queensland University of Technology)

Thesis title:

Testing of Phasor Measurement Units (PMUs) for Distribution Network Applications

Description:

Enabling islanded operation of power distribution networks will greatly improve the reliability of supply for customers. Measurement devices such as Phasor Measurement Units (PMUs) are required to protect and control the islanded network. PMUs are widely used in transmission network. This thesis examines whether existing PMUs meet the performance requirements to enable islanded distribution network operation.

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Supervisor/s: Mark Broadmeadow (Queensland University of Technology), Geoffrey Walker (Queensland University of Technology)

Thesis title:

Closed Loop, Co-operative, Distributed, Control of a Multilevel Modular Cascade Converter (MMCC)

Description:

This thesis uses computer simulation techniques to develop and test a distributed control structure for a single-sided bridge-cell, multilevel modular cascade converter STATCOM. The control technique was designed to track a reference current and balance the voltage in the modules. A master controller was designed to track the reference current while each module had a controller which oversaw balancing the voltage among the modules. The master controller was also able to estimate the total dc voltage in the system, reducing the number of sensors required and making the control structure truly distributed. The research findings will contribute towards making multilevel modular cascade converters more modular in nature.

Introduction

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David Pershouse

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Thesis by Monograph

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Country: Australia

Supervisor/s: Adalbert Meinert (Queensland University of Technology), Abbas Shafiee (Queensland University of Technology), Johannes Malda (Queensland University of Technology), Dietmar Hutmacher (Queensland University of Technology)

Thesis title:

Effect of Decellularisation Methods on Methacryloyl-Substituted Placental ECM Hydrogels

Description:

Biomedical research uses hydrogels for cell culture to closely mimic cellular environments and produce more accurate results than traditional methods. Here, human placenta, a tissue rich in bio-signalling molecules, is used as a base material to create a novel type of hydrogel that can be cured by exposure to visible light (Placental-Methacryloyl; PlacMA). Effects of different preparation methods are explored while mechanical, chemical and biological properties of PlacMA are investigated. PlacMA was found to be highly tuneable and suitable for a variety of cell culture and tissue engineering applications, demonstrating its potential to advance the current techniques in biomedical research.

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Country: Australia

Supervisor/s: Maria Woodruff (Queensland University of Technology), Jiongyu Ren (Queensland University of Technology), Johannes Malda (Queensland University of Technology)

Thesis title:

The Development of Strontium-Substituted Bioactive Glass Composite Scaffolds for Patient- Specific Bone Repair

Description:

Large (critical-sized) bone defects present a regenerative challenge to the body. Scaffold-based tissue engineering techniques can potentially address the challenge through the convergence of patient-specific design and novel biomaterials. This project investigated the in vitro bone forming capacity of a bioactive composite biomaterial scaffold produced with a high-resolution 3D printing technique: melt electrowriting (MEW). The MEW fabricated composite material was found to enhance the differentiation of bone-forming cells.

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Country: Indonesia

Supervisor/s: Kerrie Mengersen (Queensland University of Technology), Gentry White (Queensland University of Technology), Susanna Cramb (Queensland University of Technology), Wenbiao Hu (Queensland University of Technology)

Thesis title:

Bayesian Spatio-Temporal Modelling of Small Areas: Dengue Fever in Makassar Indonesia

Description:

Dengue fever is still a serious problem in Indonesia, including Makassar. This thesis evaluates and applies different Bayesian spatial and spatio-temporal models when there are a small number of areas plus extends Bayesian spatial Weibull and Semiparametric Cox survival models to describe dengue hospital duration spatial patterns to help understand dengue fever in Makassar Indonesia. The key objectives are to investigate the impact of a small number of areas on the estimation of spatial and spatio-temporal models. The convenience of using Bayesian spatial and spatio-temporal models on dengue fever is clearly demonstrated through this detailed and comprehensive analysis.

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Country: Sri Lanka

Supervisor/s: Melissa Teo (Queensland University of Technology), Sobana Goonetilleke (Queensland University of Technology)

Thesis title:

Surrogate Approach to Assess Social Resilience in Disaster Management

Description:

This thesis presents an innovative approach to assess social resilience in disaster management using surrogate approach. Surrogates are explored by identifying key facets of target indicators, when target indicators are complex and/or not feasible to measure directly. The existing social resilience measurements are not always practical or effective due to conceptual and methodical constraints. This thesis devised and tested an integrated surrogate development framework to conceptualize, identify, and evaluate surrogates for assessing social resilience. The findings will guide policy makers and practitioners, particularly at the local and sub-national levels, to overcome the existing challenges in resilience assessment in disaster management.

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Country: Bangladesh

Supervisor/s: Dimitri Perrin (Queensland University of Technology), Clinton Fookes (Queensland University of Technology)

Thesis title:

Deep Learning for Registration of High-Resolution 3D Brain Images

Description:

This thesis is a comprehensive study, evaluation and experimentation of image registration tools for high-resolution tissue-cleared images. Tissue Clearing allows 3D imaging of whole brains at the single cell resolution. The thesis examines conventional image registration tools and identifies their limited ability to handle such samples. Based on these findings, the thesis dedicates its investigation on more efficient and accurate algorithm development for the registration of tissue-cleared 3D images. A number of deep-learning based methods are tested and shown to be very efficient compared to their conventional counterparts.

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Country: Saudi Arabia

Supervisor/s: Yuefeng Li (Queensland University of Technology), Yue Xu (Queensland University of Technology)

Thesis title:

Text Feature Selection for Relevance Discovery: A Fusion-Based Approach

Description:

This thesis presents innovative and effective feature selection models and frameworks to select and weight relevant features that describe user information needs. The proposed techniques fuse different text features to overcome problems in latent Dirichlet allocation and the relevant features discovered by existing relevance discovery algorithms. The proposed models and frameworks extend multiple random sets to model and understand the complex relationships between different entities that affect the weighting process of topical terms at both document- and collection-levels. The proposed techniques can reduce uncertainties in discovered relevant features and significantly improve the performance of text mining applications.

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Supervisor/s: Azharul Karim (Queensland University of Technology), Mohd Islam (Queensland University of Technology), Janak Vidanarachchi (University of Peradeniya), Kfst Silva (University of Peradeniya)

Thesis title:

Thesis information is under embargo.

Description:

Thesis information is under embargo.

Introduction

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Country: Sri Lanka

Supervisor/s: Luis Gonzalez (Queensland University of Technology), Jonathan Roberts (Queensland University of Technology), Roshan Ragel (University of Peradeniya)

Thesis title:

A Framework for Vision-Based Ground Target Finding and Action Using Multirotor UAVs

Description:

This thesis presents a novel framework to perform single or multiple ground target finding and action missions using low-cost Unmanned Aerial Vehicles (UAVs). This framework enables small UAVs to overcome the challenges present in real-world outdoor environments due to localization and target detection errors, and external disturbances such as wind in target finding and action missions. This presented framework can be used for multiple autonomous and semi-autonomous UAV applications, including spot spraying in agriculture, search and rescue, and close inspection.

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Country: Philippines

Supervisor/s: Margot Brereton (Queensland University of Technology), Alessandro Soro (Queensland University of Technology), Elinor Buys (Queensland University of Technology), Paul Roe (Queensland University of Technology)

Thesis title:

From Monitoring to Engagement: Co-Designing Future Technologies with Older Adults

Description:

Monitoring technology solutions for older people's independent living tends to treat them as passive recipients of technology to be observed by others. This thesis investigated older people's perspectives, exploring how they might reimagine these technologies in their life and future, by involving them in co-design and qualitative research. Studies included older adults inventing their own Internet of Things with kits, writing fictional works about life with future technology, and trialling a collaborative 'messaging kettle'. This thesis proposes a design approach that shifts the emphasis from perceived needs to bring to light the lived values, agency and aspirations of older people.

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Thesis title:

Thesis information is under embargo.

Description:

Thesis information is under embargo.

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Supervisor/s: Dietmar Hutmacher (Queensland University of Technology), Felipe Prosper (University of Navarra), Jacqui MCGovern (Queensland University of Technology), Laura Bray (Queensland University of Technology), Maria Elena Juan Pardo (Queensland University of Technology), Andrew Nicol (Queensland University of Technology)

Introduction

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Country: Yemen

Supervisor/s: Yan Lamari (Queensland University of Technology), Marc Miska (Queensland University of Technology), Bambang Trigunarsyah (King Fahd University of Petroleum and Minerals)

Thesis title:

A Real-Time Worker Activity Intensity Identification System for Construction Workers Under Hot and Humid Weather Conditions

Description:

This research examined a novel real-time, non-intrusive activity intensity identification system that approximate site activity intensity levels and their associated risks under hot and humid weather conditions. The research revealed that the activity intensity identification system provides real-time, non-intrusive measurements and early warning signs at the crew level. Physical work and site activities also contribute to high activity intensity levels, while the combined effects of activity intensity and hot and humid weather conditions have substantial direct and indirect heat-related risks. The findings contribute to innovative methods for real-site measurements and reinforce early warning signs to take heat-related interventions at the right time.

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Country: Iraq

Supervisor/s: Anagiyaddage Jayalath (Queensland University of Technology), Bouchra Senadji (Queensland University of Technology), Jasmine Banks (Queensland University of Technology), Petrus Van Heijster (Queensland University of Technology)

Thesis title:

A Novel Generalized Multilevel-Hybrid Chaotic Oscillator for Communication Systems

Description:

Signals in chaotic communication systems can be used in secure communications because they are unstable and aperiodic making them difficult to detect or predict. Receivers for conventional chaotic communication systems are complex as chaotic signals are sensitive initial condition and difficult to synchronize. This research developed a method to create a Generalized Multilevel-Hybrid Chaotic Oscillator and derived its generalized fixed basis function leading to the implementation of a simple matched filter receiver that can be synchronized. The proposed system is not sensitive initial condition and can be used effectively for multi-level and multi-access communication systems.

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Country: Papua New Guinea

Supervisor/s: Andrea Blake (Queensland University of Technology), Clevo Wilson (Queensland University of Technology)

Thesis title:

Towards a Culturally Inclusive Valuation Method for Assessing Compensation in Compulsory Acquisition of Customary Land: The Case for Papua New Guinea

Description:

A culturally inclusive valuation method for assessing customary land compensation in compulsory acquisition is developed in this study. Cultural value is apparently identified as a compensation entitlement in customary land acquisition and the empirical valuation of its loss is based on the cumulative logistic regression formulation of deprived customary land owner's willingness to accept compensation. Compensation is then based on the integration of market value of tangible assets and the inherent cultural value in indigenous land. In this respect, proposed method embraces the normative standard of compensation equity and recognizes the reality of cultural value imperatives in indigenous land.

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Country: Austria

Supervisor/s: Stuart Parsons (Queensland University of Technology), Susan Fuller (Queensland University of Technology), Marco Tschapka (University of Ulm)

Thesis title:

Phylogeography, áHabitatáandáResourceáUseáofáNyctimeneárobinsoni

Description:

Thesis information is under embargo until 6 August 2022.

Introduction

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Country: Australia

Supervisor/s: Kerrie Mengersen (Queensland University of Technology), Paul Wu (Queensland University of Technology), Fabrizio Ruggeri (Queensland University of Technology)

Thesis title:

Dynamic Queueing Networks: Simulation, Estimation and Prediction

Description:

Inspired by the problem of managing passenger flow in airport terminals, novel statistical approaches to simulation, estimation and prediction of these systems were developed. A simulation algorithm was developed with computational speed-ups of more than one hundred-fold. The computational improvement was leveraged to infer parameters governing a dynamic queueing system for the first time. Motivated by the original application, contributions to both functional data analysis as well as combined parameter and state inference were made.

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Anthony Verderosa

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Country: Australia

Supervisor/s: Kathryn Fairfull-Smith (Queensland University of Technology), Makrina Totsika (Queensland University of Technology), Steven Bottle (Queensland University of Technology)

Thesis title:

Nitroxide Functionalised Antibiotics for the Eradication of Bacterial Biofilms

Description:

Bacterial biofilms are a leading cause of life-threatening and device-related infections worldwide. Biofilm related infections are notoriously difficult to treat as they are highly tolerant to conventional antibiotics. This project has designed and synthesised a new class of antibiotics to circumvent biofilm tolerance and shown that the prepared compounds could eradicate several medically important pathogens (*P. aeruginosa*, *E. coli*, and *S. aureus*). Importantly, as these compounds are hybrids of drugs that are already used clinically as stand-alone therapies, they demonstrate great potential to be translated into therapies in the near future.

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Country: Bangladesh

Supervisor/s: Shawn Nielsen (Queensland University of Technology), Ghavameddin Nourbakhsh (Queensland University of Technology)

Thesis title:

Condition Assessment of High Voltage Insulators in Different Environments with Non-Sinusoidal Excitation

Description:

This project was a step forward in investigating the effect of supply voltage harmonic contents on the measured leakage current of polluted insulators operating in different environments. This study was then used as a basis for developing a sound theoretical understanding of the effects of supply voltage harmonic contents on the measured leakage current characteristics. This study was also used to develop a new condition monitoring index for the polluted insulator under harmonically distorted supply voltage.

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Country: Australia

Supervisor/s: William Coffey (Queensland University of Technology), Hung Chan (Queensland University of Technology), Miljenka Perovic (Queensland University of Technology)

Thesis title:

Developing a Model for Maintenance-focused Heritage Building Conservation

Description:

Heritage conservation has become mainstream practice as conservation professionals discover that so many aging heritage buildings require engineering solutions. This project prepares engineers and heritage practitioners to face this challenge and makes a major step forward by developing a model for a maintenance-focused conservation management of heritage buildings. The thesis examines how the current practices of demolition, reconstruction and destructive repairs would benefit from shifting to a more conservative maintenance approach. Using the important elements of this model; tools and technology, market creation, training and licensing, a workable heritage conservation management plan can be applied to Australia's precious heritage buildings.

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Country: Iran

Supervisor/s: Yateendra Mishra (Queensland University of Technology), Gerard Ledwich (Queensland University of Technology)

Thesis title:

A Coordinated Energy Management Scheme in a Residential Neighborhood Under Given Market Framework

Description:

This thesis proposes a computationally efficient home energy management system to optimize the electricity payment and improve the occupant's comfort degree by appropriately scheduling all devices of the home. It incorporates solar panels, battery systems, thermostatically controlled appliances, and deferrable appliances. Also, this thesis develops a coordinated framework for the operation of multiple home energy management systems in a residential neighborhood based on the optimal and secure operation of the grid. The coordinated load scheduling framework enables customers to cooperate to optimize energy consumption at the neighborhood level and prevents any limitation violation in the grid operational constraints.

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Country: Saudi Arabia

Supervisor/s: Yue Xu (Queensland University of Technology),
Jason Watson (Queensland University of Technology)

Thesis title:

Topic-Based Feature Selection and a Hybrid Approach For Detecting Spammers on Twitter

Description:

This thesis is an application of text mining techniques on Twitter to detect harmful users known as spam users. It examines users' posted content and characteristics to understand harmful activities and detect them. The thesis proposed methods to identify a set of new features that can accurately represent users' behavior, and also proposed a novel two-stage approach to detect spam users based on the features. The experiments conducted in the thesis work showed the effectiveness of the proposed features and the two-stage approach in detecting spam users. The thesis work made contributions to creating more safe and healthy social networks.

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Country: Sri Lanka

Supervisor/s: Sobana Goonetilleke (Queensland University of Technology), Weerawickramage Egodawatta (Queensland University of Technology), Shameen Jinadasa (University of Peradeniya)

Thesis title:

Influence of Physico-Chemical Properties of Biosorbents on Heavy Metal Removal from Industrial Wastewater

Description:

Thesis information is under embargo until 20 April 2022.

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Country: India

Supervisor/s: Ashish Bhaskar (Queensland University of Technology), Md. Mazharul Haque (Queensland University of Technology), Edward Chung (Hong Kong Polytechnic University)

Thesis title:

An Extended Cell Transmission Model For Arterial Traffic and Its Application to Design a Robust Signal Plan

Description:

Traffic signals are an integral part of arterial roads, and the performance of optimized traffic signals play a critical role in managing recurrent congestion. The performance efficiency of signal control relies mainly on: a) accuracy and efficiency of traffic flow models that are used to evaluate the performance of different signal plans under various scenarios during signal optimization and b) signal designing technique used for producing signal plans. Hence, this research developed an Arterial Cell Transmission Model (ACTM) for a more realistic simulation of arterial traffic. ACTM is used to develop a Metaheuristic Robust plan Approach (MHRA) to design a robust signal plan that can maintain stable performance under varying traffic demands.

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Country: Thailand

Supervisor/s: Maolin Tang (Queensland University of Technology), Yuchu Tian (Queensland University of Technology)

Thesis title:

Minimising the Energy Consumption of Data Centres by Genetic Algorithms

Description:

Due to the rapid growth of cloud computing, the energy consumption in cloud data centres is increasing dramatically, which leads to the increase of the operational cost of the data centres and creates carbon pollution. The energy consumption of a cloud data centre can be significantly reduced through smart resource management. In this PhD research, I have developed an intelligent approach to the resource management problem. Experimental results have shown that the proposed approach is effective and efficient.

Introduction

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Country: Australia

Supervisor/s: Jayasiri Rajapakse (Queensland University of Technology), Graeme Millar (Queensland University of Technology)

Thesis title:

Nutrient Recovery as Struvite from Conventional Activated Sludge Treatment Plants

Description:

The main aim of the research work in this thesis is to study the nutrient recovery from conventional wastewater (sewage) treatment plant and then to reuse the recovered nutrients for immobilization of heavy metals in contaminated soil. The research findings confirm the potential of reducing pollution loads of concentrated wastewater by recovering nutrients, which can be used as a fertilizer as well as a soil amendment for heavy metal immobilization. The research outcomes in this thesis should be of great engineering significance to the wastewater industry and environment sustainability.

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Country: Sri Lanka

Supervisor/s: Colin Fidge (Queensland University of Technology), Chun Ouyang (Queensland University of Technology), Gihan Wikramanayake (University of Colombo), Tony Sahama (Queensland University of Technology)

Thesis title:

Information Accountability in Health Information Systems Using Process Analytics

Description:

The thesis presents ways of automatically detecting healthcare policy violations in Health Information Systems (HISs), as one part of an overall Information Accountability Framework, intended to hold system users answerable for their information use. The significance of this research is the demonstration of an auditing approach that includes healthcare log enrichment and methods of modelling healthcare policies and standards that can be used for checking policy compliance in the healthcare industry. It also paves the way for how process analytics can be used to hold people accountable for their information use in HISs.

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Country: Nigeria

Supervisor/s: Branka Miljevic (Queensland University of Technology), Zoran Ristovski (Queensland University of Technology), Svetlana Stevanovic (Deakin University)

Thesis title:

Investigation of volatile organic compounds from diesel engine emissions using H₃O⁺ chemical ionisation mass spectrometry (H₃O⁺ - CIMS)

Description:

This thesis contributed to better understanding of emissions from diesel engines. The methodology is based on measuring primary diesel emissions using chemical ionisation mass spectrometry. The project investigated volatile organic compounds from 3 different diesel engines using diesel and biodiesel fuels.

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Christopher From

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Thesis by Monograph

Thesis DOI: <http://doi.org/10.5204/thesis.eprints.200190>

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Country: Denmark

Supervisor/s: Emilie Sauret (Queensland University of Technology), Yuantong Gu (Queensland University of Technology), Sergio Andres Galindo Torres (University of Liverpool)

Thesis title:

High-Order Lattice Boltzmann For Nonideal Fluid Mixtures

Description:

Nonideal fluid mixtures are ubiquitous in nature and the study of their fundamental dynamics is important in many areas of modern science, such as miniaturized flow processes for portable small-scale medical diagnostic tools. However, numerical simulations of such flows face a formidable multi-scale challenge due to the competing nonideal interactions. This thesis presents a novel numerical model for simulating nonideal fluid mixtures based on high-order lattice Boltzmann methods. A solution to gauge the physical interpretations of nonideal interactions is proposed and with this, previously unknown transport properties are derived, including, the equation of state, interface tension, diffusion coefficient, and contact angle.

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Chunmei Zhang

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Thesis by Publication

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Country: China

Supervisor/s: Aijun Du (Queensland University of Technology),
Steven Bottle (Queensland University of Technology)

Thesis title:

Computational Discovery and Design of Novel Materials from Electronic Structure Engineering

Description:

This thesis studied the electronic structure of materials based on density functional theory calculations and theoretical tight-binding modelling. Besides the electronic structure for pure two-dimensional and three-dimensional materials, this research also explored the new physics in the interface and surface of those materials. In doing so, this thesis discovered and designed a series of novel materials which can be used in nanoelectronics, optoelectronics, information storage, as well as energy storage.

Introduction

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Clare Villalba

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Thesis by Monograph

Institute of Health and Biomedical Innovation (IHBI)

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Country: Australia

Supervisor/s: Jonathan Roberts (Queensland University of Technology), Anjali Tumkur Jaiprakash (Queensland University of Technology), Jared Donovan (Queensland University of Technology), Deborah Askew (University of Queensland)

Thesis title:

Fresh Eyes: A Human-Centred Design Approach to Diabetic Retinopathy Screening in Primary Care

Description:

All people with diabetes are at risk of vision loss due to the eye disease, diabetic retinopathy (DR). DR is 95% preventable, but there are no early noticeable symptoms. A human-centred research and design approach was used, to explore how to implement DR screening in primary care to meet the needs of Australians with diabetes, particularly Aboriginal and Torres Strait Islander people. The collaborative, iterative investigation identified tensions of living with diabetes, design considerations for screening, instigated community discourse and prompted collective action. The research outcomes contribute towards better understanding and implementation of human-centred DR screening in primary care.

Introduction

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Country: Chile

Supervisor/s: Petrus Van Heijster (Queensland University of Technology), Michael Bode (Queensland University of Technology), Graeme Pettet (Queensland University of Technology), Jose Flores (Queensland University of Technology)

Thesis title:

Temporal and Spatio-Temporal Dynamics in Predator-Prey Models

Description:

This thesis analyses temporal and spatio-temporal modified Holling-Tanner predator-prey models with alternative food for predators. Different types of functional responses and a density-dependent phenomenon called Allee effect(s) on the prey were considered. By using analytical and numerical analysis, the stability of the equilibrium points for the different combinations of modifications were proven. The necessary conditions for the models to undergo a different type of bifurcation were illustrated. Additionally, this thesis has provided numerical evidence where the Turing instability leads to spatio-temporal patterns in a specific version of the model.

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David Warne

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Country: Australia

Supervisor/s: Matthew Simpson (Queensland University of Technology), Scott Mccue (Queensland University of Technology), Ruth Baker (University of Oxford)

Thesis title:

Computational Inference in Mathematical Biology: Methodological Developments and Applications

Description:

Complexity in living organisms occurs on multiple spatial and temporal scales. The function of tissues depends on interactions of cells, and in turn, cell dynamics depends on intercellular and intracellular biochemical networks. A diverse range of mathematical modelling frameworks are applied in quantitative biology. Effective application of models in practice depends upon reliable statistical inference methods for experimental design, model calibration and model selection. In this thesis, new results are obtained for quantification of contact inhibition and cell motility mechanisms in prostate cancer cells, and novel computationally efficient inference algorithms suited for the study of biochemical systems are developed.

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Disheng Yao

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Country: China

Supervisor/s: Hongxia Wang (Queensland University of Technology), Aijun Du (Queensland University of Technology), Eric Wacławik (Queensland University of Technology)

Thesis title:

Interfacial and Compositional Engineering of Perovskite Solar Cells for Enhanced Device Performance and Stability

Description:

This project was a comprehensive study of interfacial and compositional engineering on perovskite solar cells (PSCs). Significantly enhanced power conversion efficiency and device lifetime of PSC photovoltaic technology were achieved by ion doping based on solution-processed and vapour-assisted treatments. The effects of various amine-contained ligands on enhancing performance of PSC were systematically investigated to reveal controlling defects and interfacial properties in the materials. This work provides several new insights into perovskite solar cells. The research outcomes benefit the development of PSCs based photovoltaic technology.

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Country: Australia

Supervisor/s: Frederic Maire (Queensland University of Technology), Simon Denman (Queensland University of Technology), Anders Eriksson (University of Queensland)

Thesis title:

Deep Learning Approaches for 3D Inference from Monocular Vision

Description:

This thesis looks at deep learning approaches to 3D computer vision problems, using representations including occupancy grids, deformable meshes, key points, point clouds, and event streams. We focussed on methods targeted towards medium-sized mobile robotics platforms with modest computational power on board. Key results include state-of-the-art accuracies on single-view high resolution voxel reconstruction and event camera classification tasks, point cloud convolution networks capable of performing inference an order of magnitude faster than similar methods, and a 3D human pose lifting model with significantly fewer floating point operations and learnable weights than baseline deep learning methods.

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Dorian Yu Peng Tsai

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Country: Canada

Supervisor/s: Peter Corke (Queensland University of Technology), Donald Dansereau (Queensland University of Technology), Thierry Peynot (Queensland University of Technology)

Thesis title:

Light-Field Features for Robotic Vision in the Presence of Refractive Objects

Description:

Curved transparent objects are difficult for robots to perceive and this makes it difficult for robots to work with them. This thesis shows that multi-aperture or light-field cameras overcome this problem since they capture a set of dense and uniformly sampled views to capture multiple views of the scene. The advances constitute a critical step towards enabling robots to work more safely and reliably with everyday refractive objects.

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Country: Australia

Supervisor/s: Gerard Ledwich (Queensland University of Technology), Geoffrey Walker (Queensland University of Technology), Mark Broadmeadow (Queensland University of Technology), Richard Taylor (Queensland University of Technology), Michael Newman (Department of Defence - Defence Science and Technology Group)

Thesis title:

Resampled Pulse Width Modulation Methods for High-Bandwidth Power Electronic Amplifiers

Description:

This work investigates modifications to the existing digital sampling methods for pulse width modulation of power electronic amplifiers so that faster and more accurate control can be achieved. It proposes resampled PWM as a generalisation of the existing methods and presents simulations and experiments that demonstrate its superior performance. Power hardware in the loop experiments are also presented as a demonstration of an application which demands both high bandwidth and high amplifier power levels and which benefits from the improved controllable bandwidth of resampled PWM.

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Edward Steau

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Country: Australia

Supervisor/s: Mahadeva Mahendran (Queensland University of Technology), Anthony Ariyanayagam (Queensland University of Technology)

Thesis title:

Thesis information is under embargo.

Description:

Thesis information is under embargo.

Introduction

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Country: Scotland

Supervisor/s: Peter Grace (Queensland University of Technology), Clemens Scheer (Queensland University of Technology), Richard Conant (Queensland University of Technology), David Rowlings (Queensland University of Technology)

Thesis title:

The Fate of Above-Ground Carbon Inputs as Stable SOM and GHGs

Description:

The world urgently needs ways to keep carbon out of the atmosphere and to build food security for a rapidly growing population; building up soil carbon can do both. Whilst the importance of soil carbon is increasingly recognised, we lack the ability to quantify the magnitude and permanence of soil carbon gains from increased plant inputs. This project quantified soil organic carbon gains versus greenhouse gas losses, which will improve the predictive ability of soil carbon models that are used to inform future climate change scenarios and land use management policies.

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Eleonore Bolle

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Country: Germany

Supervisor/s: Timothy Dargaville (Queensland University of Technology), Anthony Parker (Queensland University of Technology), John Fraser (Queensland University of Technology), Makrina Totsika (Queensland University of Technology), Shaun Gregory (The Prince Charles Hospital Foundation)

Thesis title:

Reducing Infections with Percutaneous Drivelines for Mechanical Circulatory Support Using a Tissue Engineering Inspired Approach

Description:

Medical devices which cross the skin, such as drivelines that power artificial hearts, create what are essentially chronic wounds and are a major source of life-threatening infection. This research aimed to understand how novel 3-dimensional skin models that closely resemble native human skin, can be used to investigate novel driveline surfaces for their ability to increase skin integration and thus reduce bacterial infections. Using these models, it was shown that porous surfaces increase skin integration but may also exacerbate bacterial infection if microgaps between the tissue and the driveline are present.

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Farah Obeid

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Country: Palestinian, State of

Supervisor/s: Thomas Rainey (Queensland University of Technology), Richard Brown (Queensland University of Technology)

Thesis title:

Nitrogen in HTL Microalgae Biocrude: Production, Engine Performance and Emissions

Description:

This thesis explored hydrothermal co-liquefaction of algae and bagasse with a focus on the reduction of nitrogen and sulphur contents in the biocrude. Surrogate fuels mimicking the nitrogen and sulphur contents of algae biocrude were developed and tested in an engine to understand their effect on engine performance and emissions. This work provided a better understanding of the combustion of N-containing fuels and an insight into the future use of algal biocrude in combustion engines.

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Faria Shanjana Imam

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Country: Bangladesh

Supervisor/s: Ashish Bhaskar (Queensland University of Technology), Edward Chung (Queensland University of Technology)

Thesis title:

Bus Travel Time Prediction under Mixed Traffic Conditions: Integrating Transit Smart Card and Car Bluetooth Data

Description:

This thesis is a step forward in travel time prediction for bus using data fusion. This study develops two models comprising a probabilistic model of the disturbance on the bus network and an accurate and reliable bus travel time prediction model that explicitly considers the bus-car interaction and dynamic passenger demand. The findings from this research can help develop real time traveller information systems and decision support systems to improve the quality of service provided to bus passengers.

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Farrukh Baig

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Country: Pakistan

Supervisor/s: Esa Jaatinen (Queensland University of Technology), Robert Speight (Queensland University of Technology)

Thesis title:

Chemical Ecology of Carpophilus Beetles and Their Yeast Symbionts

Description:

This thesis is an exciting avenue of research that broadens our understanding of the ecological relationship between microbes and herbivorous insects and applies this knowledge to the development of new 'attract and kill' technologies in insect pest management. The outcomes of the research will help improve existing control practices for Carpophilus beetles, which are major pests in Australian horticulture, and pave the way for developing novel tools and practices for monitoring and controlling newly established insect pests.

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Country: Iran

Supervisor/s: Yuchu Tian (Queensland University of Technology), Gerard Ledwich (Queensland University of Technology), Yateendra Mishra (Queensland University of Technology)

Thesis title:

Low-latency Communications for Wide Area Control of Energy Systems

Description:

This project provides reliable and low-latency communications for wide area control in smart grid. For this purpose, a priority differentiation approach is presented. It is embedded with an application-layer acknowledgment mechanism for reliable transmission of time-critical data with high priority.

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Fathima Faheema Mohamed Hisham

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Country: Sri Lanka

Supervisor/s: Jonathan Bunker (Queensland University of Technology), Ashish Bhaskar (Queensland University of Technology)

Thesis title:

Modelling Bus Stop Capacity for On-Street, Mid-Block, Off-Line Bus Stops

Description:

This thesis identified elements and processes that influence capacity of an on-street bus stop. Factors that affect capacity were quantified and a new mathematical model was developed to account for adjacent lane traffic flow rate, upstream average waiting time, degree of saturation of the adjacent lane and degree of saturation of the loading area. This research is an improvement of Transit Capacity and Quality of Service model and can be used to test a wide range of operational protocols, in terms of capacity.

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Fei Wei

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Thesis by Publication

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Thesis DOI: <http://doi.org/10.5204/thesis.eprints.198148>

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Country: China

Supervisor/s: Yin Xiao (Queensland University of Technology),
Kenneth Beagley (Queensland University of Technology),
Ross Crawford (Queensland University of Technology),
Yinghong Zhou (Queensland University of Technology)

Thesis title:

The Osteoimmune Effect of Bone Morphogenetic Protein-2 in Bone Regeneration and Biomaterial Modification

Description:

Bone morphogenetic protein-2 (BMP2), one of most well-known osteoinductive molecules, has been extensively used in the orthopedics and dentistry. However, inflammatory reactions are regularly reported for its side effect. This project investigated the immune environment induced by BMP2 and unveiled the regulation of BMP2 in the cross talk between immune cells and bone forming cells. This project provides better understanding of BMP2 application in the treatment of fracture healing and bone-related diseases.

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Feng Yu

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Thesis by Publication

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Country: China

Supervisor/s: Hongxia Wang (Queensland University of Technology), Eric Waclawik (Queensland University of Technology), Kostyantyn Ostrikov (Queensland University of Technology)

Thesis title:

Design and Synthesis of Materials for Supercapacitors with Enhanced Energy Storage Performance

Description:

This thesis aims to increase energy storage performance of supercapacitor devices by improving the energy density of supercapacitors without significantly compromising power density. Different strategies were used in this research, including using battery materials in place of electrodes, increasing the potential window of the supercapacitor, and employing soluble dual-redox additives. These strategies led to the discovery of several high power and high energy density energy-storage technology applications that have the promising potential to be commercialized.

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Flavia Medeiros Savi

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Thesis by Publication

Institute of Health and Biomedical Innovation (IHBI)

Thesis title:

Thesis information is under embargo.

Description:

Thesis information is under embargo.

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Supervisor/s: Dietmar Hutmacher (Queensland University of Technology), Laura Bray (Queensland University of Technology), Marie-Luise Wille (Queensland University of Technology), Michael Schuetz (Queensland University of Technology)

Introduction

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Country: Sri Lanka

Supervisor/s: Richi Nayak (Queensland University of Technology), Shlomo Geva (Queensland University of Technology)

Thesis title:

Knowledge Discovery from Social Networks Using Interaction Frequency and User Hierarchy

Description:

The immense popularity of social media creates a great opportunity for businesses, citizens, politicians, and other services to reach society. Graph mining techniques are commonly used for knowledge discovery in social networks to unveil intricate structural patterns among users. However, the increasing size and complexity of social networks demand effective computational methods that can mine novel patterns. This thesis aims to incorporate two inherent properties of social networks, power-law interaction frequency distribution, and hierarchical organization of users for discovering the knowledge of prominent users and communities in the network. This thesis proposes effective computational methods to extract this knowledge.

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Country: Ghana

Supervisor/s: Weerawickramage Egodawatta (Queensland University of Technology), Godwin Ayoko (Queensland University of Technology), Sobana Goonetilleke (Queensland University of Technology)

Thesis title:

Transformation and Degradation of Organic Pollutants on Urban Road Surfaces

Description:

This thesis is an important milestone in understanding the transformation and degradation processes of polycyclic aromatic hydrocarbons (PAHs). PAHs are indicator organic pollutants in urban road dust and some of their transformed products are extremely hazardous. Analytical methods were developed and optimized to comprehensively measure PAHs and their transformed products. The optimized method and relevant statistical techniques were used to assess the ultraviolet photon driven processes of the pollutants. A novel risk assessment approach was developed to evaluate the carcinogenic health risk posed by the pollutants. The new knowledge gained is vital in addressing the challenges posed by these pollutants.

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Hans Moravej

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Country: Iran

Supervisor/s: Hung Chan (Queensland University of Technology), Khac Duy Nguyen (Queensland University of Technology), Andre Jesus (University of Warwick)

Thesis title:

Vibration-Based Probabilistic Model Updating of Civil Structures Using Structural Health Monitoring Techniques

Description:

Information extracted from monitored data is susceptible to uncertainties and not reliable to be used for structural investigations. Finite element model updating (FEMU) is an accredited framework which aims to improve the accuracy of FEMs of real structures. However, FEMU faces barriers to achieving efficiency and addressing uncertainties. This study aims to develop a probabilistic approach based on Modular Bayesian approach (MBA) to address challenges in the application of FEMU. Moreover, this research proposes an integration between MBA and structural reliability analysis to assess the performance of structures during their lifespan. The feasibility of approach is demonstrated on two structures.

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Harikrishnan Magarabooshanam

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Country: India

Supervisor/s: Mahadeva Mahendran (Queensland University of Technology), Anthony Ariyanayagam (Queensland University of Technology)

Thesis title:

Fire Performance of Complex Light Gauge Steel Framed Wall Systems

Description:

Thesis information is under embargo until 26 October 2021.

Introduction

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Hesam Shahali

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Thesis by Monograph

Institute of Health and Biomedical Innovation (IHBI)

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Supervisor/s: Prasad Yarlagadda (Queensland University of Technology), Cheng Yan (Queensland University of Technology), Hongxia Wang (Queensland University of Technology), Tuquabo Tesfamichael (Queensland University of Technology)

Thesis title:

Assessment of the Bactericidal Effect of Biomimicked Nanopillars of Cicada Wings on Titanium Implants

Description:

Biofilm formation is the major causes of infection in implants. This research presented nanopillars architecture to eliminate the bacteria attachment based on mechanical interaction. Advanced microscopy techniques (e.g. HIM and SEM and AFM) were employed to characterize the cicada wings' nanopillars and find the optimum geometry with the highest bactericidal effect. Electron beam lithography was used to mimic and fabricate versatile geometry of titanium nanopillars for orthopaedic application. It is proposed that the biomimicked titanium nanopillars have an excellent bactericidal effect in the same manner as cicada wings. The titanium nanopillars were biocompatible with human cells.

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Hoang Phuc Dang

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Country: Vietnam

Supervisor/s: Phong Tran (Queensland University of Technology), Abbas Shafiee (Queensland University of Technology), Dietmar Huttmacher (Queensland University of Technology), Timothy Dargaville (Queensland University of Technology)

Thesis title:

Fabrication and Characterization of 3D Printed Poly (Caprolactone) Scaffolds with Bimodal Porosity for Local Drug Delivery and Tissue Reconstruction Applications

Description:

Tissue reconstruction of large/critical-size defects requires scaffolds that are able to support tissue regeneration combined with other treatments to prevent tissue inflammation and disease recurrence. Therefore, this thesis introduced and characterized a new type of 3D scaffolds having macroscale porosity generated from the printing pattern and intra-strut microscale porosity to be used as a dual-function scaffold for both local drug delivery and tissue reconstruction. The scaffold was proved to provide superior treatment for breast cancer compared with conventional systemic administration method in a mouse model. The scaffold was also able to enhance tissue reconstruction in a rat model.

Introduction

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Thesis by Publication

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Country: Vietnam

Supervisor/s: Prashant Sonar (Queensland University of Technology), Hongxia Wang (Queensland University of Technology), Nunzio Motta (Queensland University of Technology)

Thesis title:

Improvement of Perovskite Solar Cells Performance and Stability via Molecular Engineering using Newly Developed Organic Hole Transporting Materials

Description:

This thesis is a study regarding the development of novel dopant-free organic hole transporting materials for more stable and highly efficient perovskite solar cells. In this study, several small molecules have been developed with desirable properties such as high purity, good solubility, suitable energy levels, high thermal ability and amorphous nature. Interestingly, these organic semiconductors can be utilized in organic light-emitting diode devices. The series of newly developed organic compounds pave the way for dual role of a material in organic light emitting diodes and perovskite solar cells applications.

Introduction

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Supervisor/s: Geoffrey Walker (Queensland University of Technology), Gerard Ledwich (Queensland University of Technology)

Thesis title:

Techno-Economical Optimisation of 50kV AC Railway Networks

Description:

Recent advances in power converter and energy storage technologies have the potential to enhance the power quality management, improve the utilization, and, consequently, reduce both capital and operational costs associated with electric railway networks. This thesis examines the new technologies and new uses of existing technologies and their suitability for integration into the AC traction power network. It includes a comprehensive comparison of the potential technical and commercial benefits of various technologies and topologies. The study is generally applicable to 25 kV or 50 kV electric railways fed from a utility grid with commercial models similar to the one described.

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Supervisor/s: Colin Fidge (Queensland University of Technology), Wayne Kelly (Queensland University of Technology), Kenneth Radke (Queensland University of Technology)

Thesis title:

Enabling Large-Scale Dataset Analysis in Resource-Constrained Environments through Application-Aware Preprocessing

Description:

In many computing applications, such as system monitoring, fault diagnostics, and bioinformatics, large datasets must be analysed. As the volume of such datasets increases inexorably, industry-standard analysis tools struggle to produce meaningful results in a reasonable amount of time or may fail to work at all. More efficient analysis software may not exist, and higher-performance computing environments may be prohibitively expensive or unsuitable for use in the field. We develop and present the technique of Application-Aware Preprocessing, incorporating user requirements directly into the data analysis process. The technique proves successful enough to allow large-scale dataset analysis in resource-constrained environments.

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Supervisor/s: Kevin Dudley (Queensland University of Technology), David Hurwood (Queensland University of Technology)

Thesis title:

Functional Characterisation of DNA Methylation in the Pest Species *Helicoverpa armigera*

Description:

This project investigated the role of DNA methylation in the cotton bollworm, *Helicoverpa armigera*. Through a combination of Next Generation Sequencing (NGS) and Liquid Chromatography Mass Spectrometry (LCMS) analyses, it was possible to quantify DNA methylation at different stages of the *H. armigera* life-cycle as well as uncover potential functional roles for this epigenetic modification in this economically devastating pest species. The results described provide further insights into the mechanisms of epigenetic systems in insects and provide a platform for future applied research.

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Country: Canada

Supervisor/s: Michael Milford (Queensland University of Technology), Niko Suenderhauf (Queensland University of Technology)

Thesis title:

Learning from Limited Experience: Real-World Robot Navigation from a Single Traversal

Description:

If you want to do something, first you have to go somewhere. Navigation is a crucial capability for any intelligent agent that is expected to operate in the world, be they human, animal, or robot. In this work, we present techniques for teaching robots to navigate in the real world, given only a single prior traversal of the environment. We employ an online adaptive approach to sequence-based localization, and a novel framework for model-based deep reinforcement learning, to develop robot systems that can successfully localize and navigate in a city.

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Country: Sri Lanka

Supervisor/s: James McGree (Queensland University of Technology), Christopher Drovandi (Queensland University of Technology)

Thesis title:

Experimental Design for Dependent Data

Description:

This PhD focused on developing new methods to design experiments where dependent data are observed. Of primary consideration was Bayesian design, i.e. designs found based on undertaking a Bayesian analysis of the data. The generic design algorithms and the loss functions proposed in this study cater to a wide range of applications, including designing clinical trials and geostatistical experiments. These tools enable informed decisions to be made efficiently through maximizing the information gained from experiments while reducing costs.

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Country: Australia

Supervisor/s: Jamie Trapp (Queensland University of Technology), Konstantin Momot (Queensland University of Technology), Scott Crowe (Queensland University of Technology), Tanya Kairn (Wesley Medical Centre)

Thesis title:

Improvements to the Delivery and Treatment Planning of Stereotactic Body Radiotherapy

Description:

This thesis investigates and develops a number improvements to a category of radiation therapy called stereotactic radiotherapy, most notably for spinal tumours. By careful consideration of planning parameters, treatment delivery accuracy can be improved and skin toxicity reduced for patients receiving this treatment. Improvements to patient safety and departmental efficiency with stereotactic radiotherapy can also be increased by matching treatment machines to each other. In addition, better patient access to this treatment can be afforded through improved design of the concrete bunkers that house these machines.

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Country: Australia

Supervisor/s: William Coffey (Queensland University of Technology), Andrew Gibson (Queensland University of Technology), Eleanor Kahu (Massey University)

Thesis title:

Student Digital Experience in a Graduate Higher Education Technology-Enhanced Learning Environment

Description:

Higher education institutions are integrating technology-enhanced learning environments to prepare students for their professional careers in organisations that demand digital competency. The purpose of this research was to understand from a student's perspective their digital experience in a graduate business higher education technology-enhanced learning environment. The setting for this research was a single case of a graduate Human Resource Management project unit offered in both an Australian business school and a U.S. business school. The findings identified students' ideal learning approach included a balance of interactive face-to-face learning and communication and the use of digital technology.

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Supervisor/s: Margot Brereton (Queensland University of Technology), Paul Roe (Queensland University of Technology), Heike Winschiers-Theophilus (Namibia University of Science and Technology), Paul Dourish (University of California, Irvine)

Thesis title:

Ngana Wubulku Junkurr-Jiku Balkaway-Ka: The Intergenerational Co-Design of a Tangible Technology to Keep Active Use of the Kuku Yalanji Aboriginal Language Strong

Description:

This project involved the co-design of a tangible technology to enrich everyday Kuku Yalanji language use by children and their families, in partnership with the Wujal Wujal Aboriginal Shire Council and community. This thesis contributes the design of a relational language technology, the 'Crocodile Language Friend' talking soft toy with a paired web application, along with novel co-design methods and whole-of-community engagement approaches. The thesis argues that participatory design practices involving tangible technologies can support community alignment of resources and initiatives towards Indigenous language revitalization efforts.

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Supervisor/s: Clinton Fookes (Queensland University of Technology), Per Eriksson (Queensland University of Technology), Subramanian Sridharan (Queensland University of Technology)

Thesis title:

Representation and Reconstruction of 3D Shapes in Computer Vision

Description:

Given a single image taken from any popular digital camera, how can an object from the scene be reconstructed, or 'grabbed', from the picture as a three-dimensional (3D) object? We humans do it effortlessly! This thesis explores how to give computers such a 3D perception. We study how to efficiently represent 3D objects to allow them to be reconstructed from an image. This is challenging as there might exist different shapes that have similar 2D projection. To constrain this ill-posed problem, we propose novel methods to encode the object's geometry and to reconstruct them by relying on 3D prior information.

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Country: China

Supervisor/s: Zhiyong Li (Queensland University of Technology), Yuantong Gu (Queensland University of Technology), Christopher Raffel (Prince Charles Hospital)

Thesis title:

Image-Based Patient-Specific Computational Biomechanical Analysis of the Interaction between Blood Flow and Atherosclerosis

Description:

This research focuses on the development of a biomechanical strategy for risk assessment of atherosclerotic plaque rupture, which is a leading cause of acute cardiovascular events, such as heart attack and stroke. Image-based three-dimensional coronary and carotid arterial models were developed, and computational biomechanical analysis was performed to evaluate the mechanical interaction between blood flow and atherosclerosis. This study uncovered the biomechanical risk factors that are associated with high-risk atherosclerosis and provided a biomechanical tool for detecting high-risk plaques. It will help with future clinical diagnosis and treatment of cardiovascular diseases.

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Supervisor/s: Kostyantyn Ostrikov (Queensland University of Technology), Anthony O'Mullane (Queensland University of Technology), Nunzio Motta (Queensland University of Technology), Avinash Balakrishnan (Suzlon Energy Ltd)

Thesis title:

Investigation of Organic - Inorganic Nano Hybrid Materials for Aluminum Ion Batteries

Description:

The objective of this project was to develop efficient electrode materials for use in an aqueous aluminum-ion battery. This study of electrodes mainly focuses on the development of earth-abundant materials fabricated by a simple hydrothermal process. This project describes the development of highly stable and efficient battery electrodes from different metal oxides from manganese and molybdenum. A cation exchange mechanism is proposed and validated in this thesis where the cations trapped in the electrodes and exchanged during aluminum-ion intercalation and extraction. In short, this thesis focuses on the development of a sustainable aqueous aluminum ion battery.

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Country: China

Supervisor/s: Cheng Yan (Queensland University of Technology), Prasad Yarlagadda (Queensland University of Technology)

Thesis title:

Development of Bioinspired Composites with Hierarchical Structures

Description:

Thesis information is under embargo until 12 October 2021.

Introduction

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Country: Australia

Supervisor/s: Ross Brown (Queensland University of Technology), Daniel Johnson (Queensland University of Technology)

Thesis title:

Exploring the Effect of Visual Immersion during Procedural Knowledge Elicitation within Virtual Reality

Description:

Accurately recalling and describing information is challenging. This research focusses on a new approach, which aims to help people impart knowledge of past activities and events, by role-playing their memory of a prior experience within a related virtual environment. By providing virtual stimuli and context relevant to the original experience, people were able to better recall and describe information. Further consideration of the visual presentation was explored. The result was that while a more immersive experience provided by a virtual reality headset can help people better recall information, the visual detail of the environment may not be so important.

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Country: Australia

Supervisor/s: Richard Medland (Queensland University of Technology), Rebekah Eden (Queensland University of Technology)

Thesis title:

Shared Services and the Competitive Advantage of the Firm

Description:

Using a new paradigm, this research demonstrates how a Shared Services Organisation (SSO) can create new rents and profits for the firm by providing a new Shared Services Model, framework and principles that add new knowledge to Strategic Management, demonstrating that a SSO can add competitive advantage to firms by adding new profit sources through commoditisation of internal services.

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Country: Australia

Supervisor/s: Frederic Maire (Queensland University of Technology), Simon Denman (Queensland University of Technology), Cameron Browne (Maastricht University)

Thesis title:

Self-Play Deep Learning for Games - Maximising Experiences

Description:

This thesis describes several studies focused on improving the learning efficiency to train a combined tree-search/neural-network reinforcement learning agent for different board games. The work's primary contribution is a new approach to creating training experiences by enforcing a structured learning paradigm called the end-game-first curriculum which is shown to improve the speed of learning when compared against the current state-of-the-art agent. The thesis identifies a bottleneck in the self-play experience generation for a reinforcement learning agent and explores different methods to minimise the creation of poor experiences and maximise the use of experiences that are created.

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Supervisor/s: Ziqi Sun (Queensland University of Technology),
Godwin Ayoko (Queensland University of Technology)

Thesis title:

Optimization of Two-dimensional Nanostructures for Rechargeable Batteries

Description:

This research aims to explore the optimization strategies of two-dimensional (2D) nanostructures for high-performance rechargeable batteries. Three effective strategies, including 2D-based phase engineering, component engineering and van der Waals (vdW) heterostructures, were proposed for improving electrochemical properties of 2D nanomaterials. These effective strategies will offer good references for researchers to develop practical next-generation rechargeable batteries using the emerging 2D nanomaterials.

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Supervisor/s: Sobana Goonetilleke (Queensland University of Technology), Zhanying Zhang (Queensland University of Technology), Sagadevan Mundree (Queensland University of Technology), Erick Bandala Gonzalez (Desert Research Institute)

Thesis title:

Customized Hydrochar from Biomass Materials for Water Treatment

Description:

Pollution of water resources is a global threat to human well-being. There is a need for cost-effective adsorbents for the removal of pollutants commonly present in industrial wastewater. Engineered hydrochar from biomass has the potential for removing a range of water pollutants and is emerging as a novel adsorbent. This research study investigated the potential for using hydrochar produced from two biomass materials, rice straw and pine wood chips for the removal of selected toxic industrial dyes and heavy metals. In addition, new knowledge was created relating to the adsorption mechanisms and kinetics of engineered hydrochar in pollutant removal.

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Country: Indonesia

Supervisor/s: Yan Lamari (Queensland University of Technology), Connie Susilawati (Queensland University of Technology), Bambang Trigunarsyah (King Fahd University of Petroleum and Minerals)

Thesis title:

Client Construction Project Manager Competency in Indonesia

Description:

This research focussed on the development of client project manager competencies in the construction sector in Indonesia. Contribution to existing knowledge of project management competency was achieved by providing an integrated approach to develop client project manager competency as well as informed intervention strategies at individual and organisational levels.

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Country: Saudi Arabia

Supervisor/s: Yuefeng Li (Queensland University of Technology), Yue Xu (Queensland University of Technology)

Thesis title:

Informative Feature Discovery for Social Media Mining

Description:

Finding relevant information in social media data to satisfy the user need presents unique challenges due to its nature (e.g. high volume, short length, sparseness). This thesis aims to discover informative feature representations that can help to capture user information needs when no annotated data is available. Using state-of-the-art techniques in text mining and information retrieval research, this research proposes novel methods to boost the user information need with representative information in a social media context. The experimental results show that the proposed models outperform baseline models on standard TREC 2011-2014 microblog datasets.

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Supervisor/s: William Coffey (Queensland University of Technology), Ka Hung Hon (Queensland University of Technology), Bambang Trigunaryah (King Fahd University of Petroleum and Minerals)

Thesis title:

Organisational Culture and Productivity of the Construction Industry in the Kingdom of Saudi Arabia

Description:

This thesis investigated levels of productivity, barriers to productivity improvement, and the Organisational Culture (OC) profiles of companies in KSA's construction industry. Relationships between OC and productivity and how OC influences productivity were also examined. Understanding OC's effect on productivity will enable managers and employers to better understand the OC and productivity of their staff thereby facilitating the improvement of outcomes. The research conducted over three phases comprised qualitative and quantitative analyses. A novel survey measurement instrument was validated for evaluating perceived productivity while the Denison Organisational Culture Survey was adapted to measure OC. Factor analysis and SEM were utilised.

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Country: Bhutan

Supervisor/s: Anthony Clarke (Queensland University of Technology), Susan Fuller (Queensland University of Technology)

Thesis title:

Fruit Fly Parasitoids (Hymenoptera: Braconidae: Opiinae) of South-East Queensland: Abundance, Interaction, and Adaptive Mechanisms in a Complex Environment

Description:

Fruit flies are insect pests which cause devastating losses to fruit and vegetable crops around the globe. Replacing pesticides with natural enemies is a preferred option for their sustainable control. This study investigated the abundance, distribution and biology of two such natural enemies: the small parasitic wasps *Fopius arisanus* and *Diachasmimorpha kraussii*. *F. arisanus* was identified as having more successful characteristics than *D. kraussii*, making it the most common fruit fly parasitoid in southeast Queensland. The research led to advances in understanding insect behaviour as well as recommendations for better utilisation of parasitoids for fruit fly control.

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Country: Germany

Supervisor/s: Christopher Barner-Kowollik (Queensland University of Technology), James Blinco (Queensland University of Technology)

Thesis title:

New Pathways to Polymethacrylimide (PMI) Foams

Description:

High-performance polymer foams such as polymethacrylimides are used to alleviate greenhouse gas emissions by decreasing the overall weight of vehicles. While these non-toxic, lightweight polymethacrylimide foams are time-proven products, their current production process faces several challenges, including toxic and expensive starting materials, insufficient knowledge into their formation mechanism as well as the requirement of high processing temperatures. The current PhD thesis addresses these problems by extending the base of suitable starting materials, developing advanced synthetic routes and establishing an in-depth understanding of the imidization mechanism to tune the thermal and mechanical properties of these versatile materials.

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Country: Australia

Supervisor/s: Luis Gonzalez (Queensland University of Technology), Aaron Mcfadyen (Queensland University of Technology)

Thesis title:

An Extensible Framework for Nonlinear Aerial Manipulation

Description:

This thesis presents a framework to aid in the design of a wide range of aerial manipulation systems. The framework provides an extensible architecture to develop, compare, and contrast new guidance and control methods for aerial manipulators. Key developments include a range of novel techniques to generate and track practically feasible trajectories, recover from large disturbances, and the ability to perform complex manipulation tasks. The framework is an important step towards safe and reliable aerial manipulation.

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Supervisor/s: Shlomo Geva (Queensland University of Technology), Peter Bruza (Queensland University of Technology), Laurianne Sitbon (Queensland University of Technology)

Thesis title:

Analogical Frames by Constraint Satisfaction

Description:

This research develops a new and efficient constraint satisfaction approach to the unsupervised discovery of linguistic analogies. It shows that systems of analogies can be discovered with high confidence in natural language text by a computer program without human input. The discovery of analogies is useful for many applications such as the construction of linguistic resources, natural language processing and the automation of inference and reasoning.

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Supervisor/s: Thierry Peynot (Queensland University of Technology), Niko Suenderhauf (Queensland University of Technology)

Thesis title:

Detecting Airborne Particles in Sensor Data with Deep Learning for Robust Robot Perception in Adverse Environments

Description:

This thesis presents a novel method to detect airborne particles such as dust, fog, or smoke, in the data from LiDAR sensors and stereo cameras, two types of perception sensors commonly used in robotics. The proposed approach uses deep learning classification and stochastic data fusion to detect and correctly interpret sensor data points impacted by airborne particles. The work from this thesis will enable robots to reliably perform complex tasks in challenging and unpredictable environments such as mines, agricultural fields, or roads, including in adverse weather conditions.

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Country: Australia

Supervisor/s: Scott Mccue (Queensland University of Technology), Timothy Moroney (Queensland University of Technology)

Thesis title:

A Numerical Investigation of Darcy-type Moving Boundary Problems

Description:

We investigated the development of interfacial instabilities and singularities that occur in solutions to Darcy-type moving boundary problems. We presented a robust numerical scheme which can easily be adapted to a wide range of problems that, to date, have not yet been solved. Using this scheme, we provided insight into how perturbing the geometry of a Hele-Shaw cell can be used to control the development of interfacial patterns. Further, we considered how different physical effects influence the development of a singularity due to an air bubble contracting to a point or breaking up into multiple bubbles.

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Country: Australia

Supervisor/s: Severine Mayere (Queensland University of Technology)

Thesis title:

Regional Planning In Transition: Policy Narratives at the Intersection of Regional Planning and Sustainable Infrastructure Transitions

Description:

This thesis examines how policy narratives inform the regional planning approach to sustainable infrastructure transitions. Many infrastructure systems are locked into unsustainable paths, resulting in policy, land use and infrastructure relationships that are path dependent. The research finds policy narratives indicate that infrastructure systems are reconfigured amid tensions, resistance and trade-offs that inhibit and displace sustainable innovation and transition pathways. In its current traditional form, regional planning is bound to highly institutionalised and normative conditions that resist innovative, co-evolutionary and transformative change in pursuing sustainable infrastructure transitions.

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Thesis title:

Regional Planning In Transition: Policy Narratives at the Intersection of Regional Planning and Sustainable Infrastructure Transitions

Description:

This thesis examines how policy narratives inform the regional planning approach to sustainable infrastructure transitions. Many infrastructure systems are locked into unsustainable paths, resulting in policy, land use and infrastructure relationships that are path dependent. The research finds policy narratives indicate that infrastructure systems are reconfigured amid tensions, resistance and trade-offs that inhibit and displace sustainable innovation and transition pathways. In its current traditional form, regional planning is bound to highly institutionalised and normative conditions that resist innovative, co-evolutionary and transformative change in pursuing sustainable infrastructure transitions.

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Country: Germany

Supervisor/s: Christopher Barner-Kowollik (Queensland University of Technology), Yvonne Barner (Queensland University of Technology)

Thesis title:

Quantifying Macromolecular Growth and Hierarchical Structuring on Interfaces

Description:

The research presented in the current thesis focuses on the in-depth analysis of polymers grafted onto surfaces. Advanced models and measurement methods were developed to calculate and more accurately describe the processes occurring during polymer grafting. Reaction conditions, such as solvent quality, were examined and critical effects on surface composition and density were demonstrated. The current work scrutinises contemporary methods used in surface characterisation and reinforces that careful analysis and consideration is necessary when analysing polymers grafted onto surfaces.

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Country: France

Supervisor/s: Peter Pivonka (Queensland University of Technology), Judith Little (Queensland University of Technology)

Thesis title:

Bone Remodelling and Mechanomics: Bridging Organ, Tissue, and Cell Scales to Understand Bone Structure and Function

Description:

The structure and chemical composition of our bones change over the course of life through a multi-physical process called bone remodeling. In particular, one cells living in the pores of bone tissue sense variations in their environment. In this context, we focus on mechanomics, the description of the action of mechanics on biological tissues. We explore several approaches to mechanistic modeling of bone remodeling: one addresses the question at the cellular level, the other at the organ level. We finally propose a unifying theory combining biochemical and mechanical aspects. Finally, we introduce a clinical application to adolescent idiopathic scoliosis.

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Supervisor/s: Anagiyaddage Jayalath (Queensland University of Technology), Bouchra Senadji (Queensland University of Technology), Hajime Suzuki (Commonwealth Scientific and Industrial Research Organisation (CSIRO))

Thesis title:

Channel Prediction in MU-MIMO-OFDM Downlink System

Description:

In multi-user multiple input multiple output orthogonal frequency division multiplexing downlink system, it is important to have an accurate channel state information at the base-station in order to minimize the inter-user interference. However, when the channel changes rapidly, the available channel state information at the base-station can be outdated, causing performance loss. In this research, we propose to use linear adaptive filtering algorithms, such as normalized least mean squares and recursive least squares to predict the channel state information at the base-station to improve the bit-error-rate performance of the downlink system. This research further validates the superior performance of these channel prediction algorithms over the conventional linear extrapolation method using the actual channel measurement data.

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Country: Italy

Supervisor/s: Matthew Phillips (Queensland University of Technology), Peter Prentis (Queensland University of Technology)

Thesis title:

Evolution of Marsupial Biodiversity

Description:

This thesis explored the evolutionary trajectory of marsupials, focusing primarily on the Australasian marsupial fauna, and used a phylogenetic inference approach that combines molecular, ecological and fossil data sets. A first study provided the most complete and accurate (to-date) species-level marsupial phylogeny by using the most taxonomically complete set of nuclear and mitochondrial loci. In a second study, DNA and fossils from extinct and modern taxa were used to infer the evolution of macropods. A third project inferred the most complete (to-date) time-calibrated phylogeny of Diprotodontia. By incorporating fossil data, this last project revealed apparent competitive displacement of Vombatiformes (koala and wombats) by Macropodiformes (kangaroos) from the Late Miocene onwards, and a long (~25 million year) lag in the evolution of herbivory among marsupials compared to placental mammal faunas.

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Country: Italy

Supervisor/s: Robin Drogemuller (Queensland University of Technology), Yan Lamari (Queensland University of Technology), Richard Morwood (AECOM Australia)

Thesis title:

A Collaborative Contracting Framework Supported by BIM and Lean

Description:

The construction industry has been criticised as being inefficient and fragmented. In response to the continuous dissatisfaction of many client organisations, recent decades have seen the emergence of a spectrum of contracts that embrace different degrees of collaboration promoting the development of integrated approaches to contracts and relationships. In parallel, two other independent significant developments arose to challenge the silo mentality within the industry; Building Information Modelling (BIM) and Lean management. This research explored the integration of these three initiatives with the purpose of incentivising clients to step into a new era of collaboration in construction supported by digital lean processes and advanced technologies.

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Supervisor/s: Severine Mayere (Queensland University of Technology), Paul Donehue (Queensland University of Technology), Carl Grodach (Queensland University of Technology)

Thesis title:

Evaluating the Implementation of Compact Activity Centres in Greater Brisbane

Description:

Over the past 20 years metropolitan plans have attempted to improve urban sustainability by reshaping Australian cities to include a network of compact activity centres. This research provides the first long-term and comprehensive evaluation of the implementation of greater Brisbane's activity centre policies and finds that although the plans were used as intended, they failed to achieve the desired outcomes. The research raises doubts about the current Australian planning system's capability to deliver on its core promises to reshape urban development. These results have implications for how planning can best contribute to improving urban sustainability.

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Country: Ghana

Supervisor/s: Lidia Morawska (Queensland University of Technology), Mandana Mazaheri (Queensland University of Technology)

Thesis title:

Evaluation and Application of Emergent and Wearable Air Monitors for Assessment of Personal Exposure in Urban Microenvironments

Description:

The aim of the project was to advance the scientific understanding of human exposure to air pollution. This included investigation of emerging monitors to measure personal exposure to air pollution in urban microenvironments, studies of ultrafine particles (UFPs) in a variety of microenvironments in Accra, Ghana and the assessment of schoolchildren's exposure to UFPs in this city. The thesis demonstrated the applicability conditions of commercially available low-cost sensors and mobile devices for monitoring personal exposure to air pollution and exposed the drivers behind high personal exposure and poor state of air quality in Accra.

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Thesis title:

Thesis information is under embargo.

Description:

Thesis information is under embargo.

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Country: Bangladesh

Supervisor/s: Kostyantyn Ostrikov (Queensland University of Technology), Hongxia Wang (Queensland University of Technology), Tuquabo Tesfamichael (Queensland University of Technology)

Thesis title:

Ab initio Atomistic Insights into Lead-free Perovskites for Photovoltaics and Optoelectronics

Description:

This project focuses on the development of advanced non-toxic materials for the applications in energy generation and consumption devices like solar cells, light-emitting diodes, lasers and photodetectors. A first-principles density functional theory calculations are conducted to investigate the properties of a number of inorganic, hybrid and double perovskites compounds to predict their potential for applications in photovoltaics and optoelectronics. The achieved outcomes provide a better understanding of the structural, electronic, optical and mechanical properties of a group of potential compounds and provide new scientific knowledge to develop non-toxic high-quality organic-inorganic materials for photovoltaic and optoelectronic applications.

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Supervisor/s: Douglas Baker (Queensland University of Technology), Christy Collis (Queensland University of Technology)

Thesis title:

Mechanisms of Industrial Clusters in Airport Landside Development

Description:

This thesis evaluates the impact of airports on land uses in and around airport land by a mixed research design, combining a statistical analysis based on secondary data and a case study on Brisbane Airport. The research finds that the role of airports as transport hubs is not the dominant mechanism that drives industries to locate in airport areas, rather, the surrounding city economy provided the primary impetus for business location. The findings provide a reference for policymakers regarding investment in airport expansion or construction, as well as a refining of the understanding of the local economic impact of airports.

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Supervisor/s: Matthew Phillips (Queensland University of Technology), Peter Prentis (Queensland University of Technology), Vera Weisbecker (Queensland University of Technology)

Thesis title:

Tracing the Evolution of Australasian Mammals: Integrating Morphological, Palaeontological and Molecular Data

Description:

Morphological data are crucial in evolutionary analyses for merging fossils into the tree of life, calibrating dating analyses and for enhancing inference of biological patterns and processes. Morphological phylogenetics is dominated by homoplastic characters, functional and developmental correlations, and also by highly subjective definitions of characters and their states, which in turn can mislead phylogeny reconstruction. A first study assessed the implications of biases among characters in Mesozoic mammals. Then, geometric morphometrics and molecular data were combined to study the systematics of kangaroos and wallabies. Finally, new methodologies using 3D morphometrics and multivariate statistical analyses were developed for phylogenetic inference.

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Supervisor/s: David Thambiratnam (Queensland University of Technology), Manicka Dhanasekar (Queensland University of Technology), Tatheer Zahra (Queensland University of Technology)

Thesis title:

Failure Analysis and Mitigating Strategies For Masonry Walls Subject to Vehicular Impacts

Description:

This thesis demonstrates how new materials and damping technologies were developed and applied to mitigate the adverse effects of vehicular crashes into masonry buildings. Many masonry buildings are vulnerable to vehicular crashes which result in loss of property, loss of habitat or functionality of the building and harm to the occupants of the building and vehicle. Auxetic materials were used in this research with negative Poisson ratio and innovative damping technologies at the wall edges to reduce the accident severity and to save the lives in both the building and the vehicle.

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Country: Iran

Supervisor/s: Zhiyong Li (Queensland University of Technology), Yin Xiao (Queensland University of Technology), Prasad Yarlagadda (Queensland University of Technology)

Thesis title:

On the Potential of Mg Micro-Wires for the Reinforcement of Collagen-Based Barrier Membrane for Ridge Augmentation: Structure Design, Dose Optimisation, and Surface Modification

Description:

Barrier membranes play a critical role in the success of guide bone regeneration (GBR) surgery in dentistry. Collagen-based membranes are more advantageous for delivering excellent bioactivity compared to other types of membranes. However, the lack of enough mechanical stability makes their applications challenging in GBR. This research investigated the potential of biodegradable magnesium micro-wires (MMWs) for the reinforcement of the collagen-based barrier membrane for ridge augmentation simultaneously having a stimulating effect on the bone formation. The results showed the promising role of MMWs in the development of new generation of biodegradable mechanically stable nutrient GBR membranes entitled 'Collagen-based Composite Membrane'.

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Supervisor/s: Richard Brown (Queensland University of Technology), Zoran Ristovski (Queensland University of Technology), Ali Zare (Deakin University), Pietro Borghesani (University of New South Wales), Timothy Bodisco (Deakin University)

Thesis title:

Condition Monitoring and Diagnostics for Internal Combustion Engines Using In-cylinder Pressure and Acoustic Emission

Description:

This thesis aims to provide greater understanding of engine operation through the application of in-cylinder pressure and engine structure-borne acoustic emissions, together with advanced data analysis such as cepstrum and principal component analysis. The analysis methods, coupled with the sensors, utilised in this research resulted in improved reliability in the tools and information that will be required in the development of more efficient and reliable engines. This research will be a useful resource for internal combustion engine researchers and industries.

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Country: Bangladesh

Supervisor/s: Clinton Fookes (Queensland University of Technology), Subramanian Sridharan (Queensland University of Technology)

Thesis title:

Deep Domain Adaptation and Generalisation

Description:

This thesis addresses a critical problem in computer vision of dealing with dataset bias between source and target environments. Variations in image data can arise from multiple factors including contrasts in picture quality (shading, brightness, colour, resolution, and occlusion), diverse backgrounds, distinct circumstances, changes in camera viewpoint, and implicit heterogeneity of the samples themselves. This research developed strategies to address this domain shift problem for the object recognition task. Several domain adaptation and generalization approaches based on deep neural networks were introduced to improve poor performance due to domain shift or domain bias.

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Supervisor/s: William Coffey (Queensland University of Technology), Bo Xia (Queensland University of Technology)

Thesis title:

An Exploration of Factors Influencing Quality Management Sysytem (QMS) Implementation: The Case of The Australian Construction Industry

Description:

This thesis advances the establishment of a fully developed framework for implementing more robust quality management systems in the Australian construction industry. The developed framework represents a comprehensive set of guidelines for the management teams of building organisations to address and maximise the distinct relationships between the effective deployment of QMS and the factors surrounding that implementation. The overall aim of this research has been fulfilled by adopting a combination of qualitative investigation, data collection and analysis methodologies. This exploratory research was approached by collecting data through interviews and case-studies representing Tier 1 and 2 Australian building sector projects.

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Supervisor/s: Ka Hung Hon (Queensland University of Technology), Boon Lee (Queensland University of Technology), Bo Xia (Queensland University of Technology), Ronald Skitmore (Queensland University of Technology)

Thesis title:

Diversification, Institutions, and Productivity Performance of Large Construction Firms in Malaysia

Description:

This research investigated the relationships between diversification strategies and productivity of large construction firms in Malaysia. The Generalised Method of Moments was adopted for modelling the impact of diversification strategies on productivity. The research revealed that product and market diversifications affect long-term productivity by altering firm efficiency in managing resource allocation. However, the effectiveness of diversification strategies depends on the changes in formal institutional dimensions and informal context of ownership concentration. The research findings will help construction firms to take into account the effects of institutional contexts when formulating their optimal diversification strategies for better firm productivity.

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Supervisor/s: Yateendra Mishra (Queensland University of Technology), Gerard Ledwich (Queensland University of Technology)

Thesis title:

Market Design For Peer-to-Peer Energy Trading in a Distribution Network with High Penetration of Distributed Energy Resources

Description:

This thesis examines different market structures for peer-to-peer (P2P) energy trading. Different market clearing mechanisms are designed for market settlement, including auction-based method, distributed optimisation, and decentralised market clearing. Also, price signals are introduced to model network constraints in any individual transaction in the electricity market. Moreover, a segmentation method is proposed to enhance the scalability of the P2P markets, using the clustering method.

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Thesis title:

Computational Modelling of Zeolite N Ion Exchange Properties

Description:

Zeolites are porous alumino-silicate materials with properties that result in a wide range of industrial applications. Predictions of zeolite properties can enhance higher performance and economic value for many industries. In this research, the structure and ion exchange behaviour of synthetic zeolite N is modelled using computational chemistry techniques. Modelled outcomes are compared with experimental data that are also obtained on natural zeolites from two Australian deposits. This research shows that a precise understanding and prediction of zeolite chemical and physical properties can be achieved by correlated atomic-scale modelling and high-quality experimental techniques.

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Supervisor/s: Nunzio Motta (Queensland University of Technology), Prashant Sonar (Queensland University of Technology), Tuquabo Tesfamichael (Queensland University of Technology), Mahnaz Shafiei (Queensland University of Technology)

Thesis title:

Photo Assisted Amperometric Sensing of Electrospun Tungsten Oxide Nanofibers

Description:

Monitoring and control of volatile organic compounds have become increasingly important for humans as well as for environment because of their diverse applications spanning from industrial chemical reagent to patient condition monitoring using breath analysis. For instance, exposure to low concentration of volatile organic compounds i.e. acetone, even in the range of few parts per million can cause suffocation, and nervous system disorder. Moreover, acetone is also a biomarker for type-1 diabetes and its concentration more than 1.8 ppm is an indication of diabetes compared to 0.3 - 0.9 ppm for healthy person. Nanotechnology has a significant impact on gas sensing enabling the development of nanostructure materials with high sensitivity and stability. The aim of this research was the development of low-cost miniaturised breath analyser for diabetics detection by employing nanomaterials as a sensing layer. That was achieved successfully using metal oxide nanofibers.

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Country: Bangladesh

Supervisor/s: Clinton Fookes (Queensland University of Technology), Subramanian Sridharan (Queensland University of Technology)

Thesis title:

Question-answering on Image/Video Content

Description:

This thesis explores a computer's ability to understand multimodal data where the correspondence between image/video content and natural language text are utilised to answer open-ended natural language questions through question-answering tasks. Static image data consisting of both indoor and outdoor scenes, where complex textual questions are arbitrarily posed to a machine to generate correct answers, was examined. Dynamic videos consisting of both single-camera and multi-camera settings for the exploration of more challenging and unconstrained question-answering tasks were also considered. In exploring these challenges, new deep learning processes were developed to improve a computer's ability to understand and consider multimodal data.

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Supervisor/s: William Coffey (Queensland University of Technology), Robert Perrons (Queensland University of Technology)

Thesis title:

An Empirical Investigation of Critical Risk Factors Impacting Schedule Overrun in Upstream Gas Projects in Australia

Description:

This project is a step forward in developing an integrated risk management framework to minimize schedule overrun in upstream gas projects in Australia. It examines critical technical and non-technical risks and demonstrates their interaction and interdependencies in the project environment that influence delays, potentially enabling industry practitioners to understand individual and collective influence of risk and implement strategies to achieve optimum results. It implements a three-phase research design involving survey and case studies to triangulate data and findings and the high degree of agreement between these findings together with literature review, bolster the robustness and confidence in this investigation's findings.

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Supervisor/s: Thomas Rainey (Queensland University of Technology), Richard Brown (Queensland University of Technology)

Thesis title:

Dewatering of Microalgae from Dilute Suspensions for Biofuels Production: A Single Stage Approach

Description:

This thesis reports a proof of concept for the high throughput and cost effective harvesting of microalgae, suitable for the sustainable production of microalgae-based biofuels as a renewable form of energy. The research demonstrated the technical feasibility; environmental benefits through climate change mitigation; and accruable economic viability that could be realised through adapting the wet-end of a paper making machine for harvesting microalgae. These findings will facilitate the commercial development of the microalgae-based biofuels industry.

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Country: Sri Lanka

Supervisor/s: Emilie Sauret (Queensland University of Technology), Yuantong Gu (Queensland University of Technology), Robert Flower (Australian Red Cross Blood Service), Suvash Saha (University of Technology Sydney)

Thesis title:

Numerical Investigation of Recoverability of Morphological and Deformability Changes of Stored Red Blood Cells

Description:

This thesis developed a numerical model based on the coarse-graining method to accurately and efficiently represent the changes in shape and deformability of ageing red blood cells during in vitro storage. The quality of the red blood cells declines during storage affecting the effectiveness of transfusion treatments, and this study discusses the recoverability of these changes in shape and deformability for achieving potential improvements to current storage practices for better transfusion outcomes. Further, this study is extensible to investigate the shape and deformability characteristics of healthy and diseased red blood cells for better diagnostics and treatments.

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Country: Australia

Supervisor/s: Maria Woodruff (Queensland University of Technology), Mark Allenby (Queensland University of Technology), Cynthia Wong (Queensland University of Technology)

Thesis title:

Additive Manufacturing Patient-Specific Porous High-Density Polyethylene Surgical Implants

Description:

This thesis investigated how 3D printing technology can be used to manufacture patient-specific surgical implants for maxillofacial and cranial reconstruction. Novel 3D printed implants were compared to current clinical gold-standard implants to assess material properties, implant structure and internal architecture, and the impact of manufacturing conditions such as porosity and surface treatments on cell attachment and soft tissue healing in a small animal model. These novel implants demonstrated rapid soft tissue and vascular ingrowth, showing promise for patient-specific implant manufacturing.

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Supervisor/s: Maria Elena Juan Pardo (Queensland University of Technology), Dietmar Hutmacher (Queensland University of Technology)

Thesis title:

From Native Valvular Biomechanics to Personalised Heart Valve Tissue Engineering: Convergence of Biomimetic Design Approach and Melt Electrowriting

Description:

This thesis presented a novel platform for the design and manufacture of tissue engineered heart valves to overcome the disadvantages of current heart valve prosthesis by providing an alternative valve capable of growth and remodelling. The convergence of a biomimetic design methodology and melt electrowriting was illustrated as a promising approach to embrace mechanical, structural, geometrical and functional complexities of a native heart valve, which has been challenging to achieve using currently available manufacturing technologies. This project provided a step forward toward addressing the urgent clinical need to develop functional tissue engineered heart valves.

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Country: Bangladesh

Supervisor/s: Wageeh Boles (Queensland University of Technology), Kien Nguyen Thanh (Queensland University of Technology), Riza Sulaiman (The National University of Malaysia), Vinod Chandran (Queensland University of Technology)

Thesis title:

Computer Vision Based Smoke and Fire Detection for Outdoor Environments

Description:

Surveillance Video-based detection of outdoor smoke and fire has been a challenging task due to the chaotic variations of shapes, movement, colour, texture, and density. This thesis contributes to the advancement of the contemporary efforts of smoke and fire detection by proposing novel technical methods and their possible integration into a complete fire safety model. The novel contributions of this thesis include an efficient feature calculation method combining local and global texture properties, the development of deep learning-based models and a conceptual framework to incorporate weather information in the fire safety model for improved accuracy in fire prediction and detection.

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Supervisor/s: Matthew Simpson (Queensland University of Technology), Scott Mccue (Queensland University of Technology)

Thesis title:

New Mathematical Models for Cell Biology Assays Incorporating Realistic Cell Size Dynamics

Description:

This thesis provides novel insights into several contemporary problems in the mathematical biology involving migration of living cells. Primarily, we focus on cell motility and how dynamic changes in cell size affect collective cell migration. Additionally, this thesis investigates the importance of cellular heterogeneity and how it might affect the choice of modelling techniques we use to describe in vitro cell cultures.

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Supervisor/s: Petrus Van Heijster (Queensland University of Technology), Scott Mccue (Queensland University of Technology), Robert Marangell (University of Sydney)

Thesis title:

Localised Structures in Some Non-Standard, Singularly Perturbed Partial Differential Equations

Description:

This thesis addresses the existence and stability of localised solutions in some nonstandard systems of partial differential equations. In particular, it locates the linearised spectrum of a Keller-Segel model for bacterial chemotaxis with logarithmic chemosensitivity, establishes the existence of travelling wave solutions to the Gatenby-Gawinski model for tumour invasion with the acid-mediation hypothesis using geometric singular perturbation theory, and formulates the Evans function for a trivial defect solution in a general reaction diffusion equation with an added heterogeneous defect. Extending the analysis to these non-standard problems provides a foundation and insight for more general dynamical systems.

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Supervisor/s: Hung Chan (Queensland University of Technology), Chaminda Gallage (Queensland University of Technology), Yiqing Ni (Hong Kong Polytechnic University)

Thesis title:

An Improved Modal Strain Energy Method for Bridge Damage Identification

Description:

This thesis improved a modal strain energy (MSE) based damage detection method to detect the damage in bridges. Firstly, an elemental MSE and a sensitivity matrix were mathematically established. Then, it was numerically and experimentally tested on some models such as a fixed-end beam, a three-story frame, the 4-DOF three-story structure of Los Alamos National Laboratory and the I-40 Bridge in New Mexico as a real bridge. The results showed the capability of the proposed method. The research findings will contribute to academic studies and bridge industry to minimize the loss of lives and property by identifying the structural damages.

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Supervisor/s: Scott Bryan (Queensland University of Technology), Charlotte Allen (Queensland University of Technology), David Purdy (Department of Natural Resources and Mines)

Thesis title:

Insights from the Devonian Adavale Basin on the Tectonic History of the Thomson Orogen

Description:

This research aims to advance our understanding of the expansion of the Australian continent during the Palaeozoic. Geological remnants of specific sedimentary basins in southwest Queensland and north-western NSW were used as focus sites. A novel multi-method approach used sediment compositional information and Uranium-Lead mineral dating in combination with novel statistical methods to constrain the relative timing, sediment pathways and connectivity of these basins. The research showed that although a major period of stabilisation of the Australian continent had occurred by the beginning of the Devonian, approximately 400 million years ago, the new sedimentary basins were not yet directly connected.

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Country: Kenya

Supervisor/s: Brett Williams (Queensland University of Technology), Sagadevan Mundree (Queensland University of Technology)

Thesis title:

Regulation of Plant Programmed Cell Death by Energy Metabolism in the Australian Resurrection Grass
Tripogon Loliiformis

Description:

Recent studies have shown that *T.loliiformis*, a resurrection grass, may use the tight regulation of PCD pathways like autophagy to facilitate desiccation tolerance. The aim of this project was to further investigate the mechanisms that *T.loliiformis* use to suppress PCD and survive prolonged periods of water deficit. This study provides additional insight on how *T.loliiformis* attains desiccation tolerance that significantly contributes to our knowledge on the pathways and mechanisms used by resurrection plants. The findings from this study will hopefully be employed to harness drought tolerant properties of resurrection grasses to improve the resilience of economically important crops.

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Supervisor/s: Subramanian Sridharan (Queensland University of Technology), Clinton Fookes (Queensland University of Technology), Simon Denman (Queensland University of Technology)

Thesis title:

Deep Learning for Human Action Understanding

Description:

This thesis addresses the problem of understanding human behaviour in videos in multiple problem settings including, recognition, segmentation, and prediction. Considering the complex nature of human behaviour, we propose to capture both short-term and long-term context in the given videos and propose novel multitask learning-based approaches to solve the action prediction task, as well as an adversarially-trained approach to action recognition. We demonstrate the efficacy of these techniques by applying them to multiple real-world human behaviour understanding settings including, security surveillance, sports action recognition, group activity recognition and recognition of cooking activities.

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Supervisor/s: Zoran Ristovski (Queensland University of Technology), Richard Brown (Queensland University of Technology), Thomas Rainey (Queensland University of Technology)

Thesis title:

Role of Oxygenated Fuels on Morphology and Nanostructure of Soot Particles of a Diesel Engine

Description:

This thesis investigated how the chemical composition of the fuel we use in diesel engines (i.e. biodiesels), influence the structure and agglomeration of diesel soot particles. These are properties that are important for the performance of diesel particle filters and diesel oxidation catalyst, which are after-treatment devices installed in all modern diesel cars.

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Supervisor/s: Yuantong Gu (Queensland University of Technology), Ziqi Sun (Queensland University of Technology), Arixin Bo (Queensland University of Technology)

Thesis title:

Mechanical Properties of Ti-O Based Ceramic Nanowires

Description:

This thesis thoroughly investigated the mechanical properties of Ti-O based ceramic nanowires. It revealed that elastic bending properties including elastic strain and elastic moduli of different kinds of Ti-O based ceramic nanowires were related to their crystalline structures, defects in the structures, and defect activities during bending deformation. These findings help to provide more opportunities for strain engineering on Ti-O NWs and promote potential applications of Ti-O NW-based devices.

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Country: Sri Lanka

Supervisor/s: Prasad Yarlagadda (Queensland University of Technology), Michael Cholette (Queensland University of Technology), Shirley Dewasurendra (University of Peradeniya)

Thesis title:

Fault Diagnosis - A Distributed Model-Based Approach for Safety-Critical Complex Reactive Systems with Hybrid Dynamics

Description:

This thesis develop basis to implement integrated control and fault diagnosis systems for complex dynamic safety-critical systems. A distributed systems architecture and its implementation on a real physical elevator system was discussed giving recommendations for commercial applications. A physical system was modelled as a combined model of finite state machines and bond graphs.

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Country: Portugal

Supervisor/s: Kathleen Mullen (Queensland University of Technology), Kathryn Fairfull-Smith (Queensland University of Technology)

Thesis title:

Dynamic Covalent Chemistry at the Solution: Surface Interface

Description:

Mechanically interlocked architectures have shown great promise in applications such as catalysis, sensing and drug delivery. They have also been developed as the basis of molecular machinery. However, the use of such systems often requires their incorporation to surfaces or solid supports for amplified concerted action and reusability. This research investigated new methods for the attachment of rotaxanes to polymer resins. By adopting a dynamic covalent approach to surface attachment, great improvements in proportion of rotaxanes, when compared to kinetic by-products, were achieved on polymer resins.

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Country: Sri Lanka

Supervisor/s: Chaminda Gallage (Queensland University of Technology), Leslie Dawes (Queensland University of Technology)

Thesis title:

Investigation of Climatic-Induced Ground Responses in Expansive Soils

Description:

This thesis presents a practical approach for geotechnical practitioners to investigate the climatic-induced ground responses in expansive soils. The method is based on a novel long-term operable instrumented soil column (ISC). This research investigated the applicability of the current displacement models to the Australian context. As a result, the structural damages and maintenance costs due to cracking of light-weight structures founded on such soils can be minimised, and more importantly, the hazards to human lives can be prevented by improved decisions.

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Supervisor/s: Zoran Ristovski (Queensland University of Technology), Graham Johnson (Queensland University of Technology), Svetlana Stevanovic (Deakin University)

Thesis title:

Development and Deployment of Novel Instrumentation for the Real-time Monitoring of Atmospheric PM-bound ROS

Description:

This thesis details the development and deployment of a novel instrument to quantify particle-bound reactive oxygen species (ROS) in the atmosphere. ROS are significant as they are believed to be one of the underlying mechanisms explaining the link between air pollution exposure and a variety of cardiovascular, respiratory, and neurological diseases. The time resolution, sensitivity and stability of the instrument are higher than any comparable system in literature. In field trials this has allowed first the first ever observations of short-lived ROS species in an atmospheric environment, which has significant implications in the field of atmospheric pollution toxicity.

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Supervisor/s: David Thambiratnam (Queensland University of Technology), Hung Chan (Queensland University of Technology), Nimal Perera (Queensland University of Technology)

Thesis title:

Blast Response of Cable Supported Glass Facades

Description:

This research developed techniques to determine the response of cable supported glass facades to credible blast events and evaluated the effects of controlling parameters. Research outcomes will enable to provide mitigation strategies to vulnerable buildings fronted by such glass facades.

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Country: United States of America

Supervisor/s: Ian Stoodley (Queensland University of Technology), Sylvia Edwards (Queensland University of Technology), Patricia Franks (San Jose State University)

Thesis title:

Appraisal and Retention of Information in the Private Sector: A Case Study

Description:

The purpose of this study was to describe how appraisal of electronically stored information (ESI) is currently being conducted within a private U.S. organization and the current technological paradigm. It examines and describes the decision-making processes, underlying criteria, and possible factors determining how information is appraised and how this impacts retention and disposition in a private organization. The findings are relevant to challenges facing information professionals today and possible new approaches to appraisal and retention.

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Country: Bangladesh

Supervisor/s: Md. Mazharul Haque (Queensland University of Technology), Douglas Baker (Queensland University of Technology), Md Kamruzzaman (Monash University)

Thesis title:

The Impact of Built Environment on Children Independent Mobility: A Comparative Analysis between Discretionary and Nondiscretionary Activities

Description:

This research examines the effects of topological (e.g., street configuration) and geographic (e.g., land use, building height) features of the built environment (BE) on children independent mobility (CIM) to discretionary (e.g., park, shop) and nondiscretionary (e.g., school) destinations. Using travel data collected through travel diary and route mapping, and BE data of comparable routes collected through virtual BE audit, a wide range of promoters and barriers of CIM were identified. The findings highlight that, to design children-friendly environment and maximise CIM, geographic features need to be considered in tandem with topological features of the BE, stratified by destination type.

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Country: Iran

Supervisor/s: Martin Sillence (Queensland University of Technology), Melody De Laat (Queensland University of Technology)

Thesis title:

The Development of a Novel Treatment for Equine Laminitis

Description:

Each year hundreds of horses are destroyed due to a crippling hoof disease known as laminitis. This project set out to discover how high concentrations of insulin can cause damage in the hoof and to determine if the disease can be prevented using a therapeutic antibody that blocks receptors for an insulin-like growth factor. Therapeutic antibodies have been developed to treat illness in humans but have never been used in horses. The results showed that the antibody can limit the damage caused by insulin and that it may become a useful treatment in the future.

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Country: Indonesia

Supervisor/s: Ashish Bhaskar (Queensland University of Technology), Yuefeng Li (Queensland University of Technology), Zuduo Zheng (University of Queensland), Edward Chung (Hong Kong Polytechnic University)

Thesis title:

Network-Scale Arterial Traffic State Prediction: Fusing Multisensor Traffic Data

Description:

Road traffic congestion is an increasing societal problem. Road agencies and users seek accurate and reliable travel speed information. This thesis developed a network-scale traffic state prediction based on Convolutional Neural Network (CNN). The method can predict the speed over the network accurately by preserving road connectivity and incorporating historical datasets. When dealing with an extensive network, the thesis also developed a clustering method to reduce the complexity of the prediction. By accurately predicting the traffic state over a network, traffic operators can manage the network more effectively and travellers can make informed decisions on their journeys.

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Country: Sri Lanka

Supervisor/s: Mahadeva Mahendran (Queensland University of Technology), Anthony Ariyanayagam (Queensland University of Technology)

Thesis title:

Fire and Energy Performance of Cold-formed Steel Frame Wall Systems

Description:

This research investigated the fire and energy performance of cold-formed light-gauge steel-framed (LSF) wall configurations and proposed suitable methods to improve their combined fire and energy performance through the incorporation of (1) appropriate fire-resistive and energy-efficient building materials and (2) modifications to the arrangement or configurations of walls. This research has advanced the current knowledge of both fire and energy performance of LSF walls, paving the way for the development and use of alternative materials and LSF wall configurations.

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Country: Australia

Supervisor/s: Matthew Simpson (Queensland University of Technology), Scott Mccue (Queensland University of Technology), Nikolas Haass (University of Queensland)

Thesis title:

Mathematical Models for Cell Migration and Proliferation Informed by Visualisation of the Cell Cycle

Description:

Cell migration and proliferation are essential for normal physiological processes, however their misregulation contributes to pathologies including cancer. In this thesis we develop and analyse new mathematical models of cell migration and proliferation, based on new experimental studies that provide visualisation of cell cycle progression, to improve understanding of the migration and proliferation of cells. In particular, we investigate cell migration as a function of cell cycle dynamics, normally-hidden cell synchronisation in cellular assays, whether cell migration and proliferation are mutually exclusive processes, and cellular mechanisms that contribute to heterogeneous cell proliferation.

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Thesis title:

Non-rigid 3D Reconstruction of the Human Body in Motion

Description:

This thesis addresses the challenging problem of three-dimensional (3-D) reconstruction of a fast-moving human, using a single moving camera which captures both depth and colour information (RGB-D). Our objective is to find solutions to the challenges arising from the high camera motion and articulated human motions. We have developed an effective system which uses the camera pose, skeleton detection, and multi-scale information, to produce a robust reconstruction framework for 3-D modelling of fast-moving humans. The outcome of the research is useful for several applications of human performance capture systems in sports, the arts, and animation industries.

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Country: Iran

Supervisor/s: David Holmes (Queensland University of Technology), Richard Brown (Queensland University of Technology), Pahala Jayathilake (University of Oxford)

Thesis title:

Numerical Investigation of Muco-ciliary Transport

Description:

The human airways are protected from inhaled external substances by an extremely thin layer called airway surface liquid. This film of liquid captures most of the inhaled toxic particles and is constantly propelled back out of the airway by a dense mat of beating hair-like structures, thus cleansing the airways of inhaled pathogens. It is vital to better understand this clearance process under diseased conditions and to predict the fate of therapeutic drug particles after deposition. An advanced numerical model is developed to investigate these objectives, given that the complex nature of lung clearance limits the ability to conduct experiments.

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Country: China

Supervisor/s: David Hurwood (Queensland University of Technology), Peter Prentis (Queensland University of Technology), Peter Mather (Queensland University of Technology)

Thesis title:

Genetic Improvement of the Pacific White Shrimp (*Penaeus vannamei*) in China

Description:

Farming Pacific white shrimp (*Penaeus vannamei*) is one of the most important aquaculture industries around the world with China the biggest producer. To date however, this industry relies largely on unimproved stocks. This project represents a step towards genetic improvement of *P. vannamei* through family selection in China. It examines genetic diversity and relatedness among domesticated culture lines generating information used for producing a base population with broad genetic variation. Subsequent quantitative genetic analyses have shown that growth and several key reproductive traits can theoretically, be exploited via selection in future breed improvement program.

Introduction

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Sirinthip Roomkham

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Thesis by Monograph

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Country: Thailand

Supervisor/s: Dimitri Perrin (Queensland University of Technology), David Lovell (Queensland University of Technology)

Thesis title:

The Potential of Personal Devices in Large-Scale Sleep Studies

Description:

This thesis investigated the use of consumer wearable devices to gather large quantities of data in naturalistic settings and enable large-scale sleep studies. By exploiting the massive uptake of mobile phones and wearable devices and using the data they produce for large-scale sleep monitoring, this research opens the way for a better understanding of sleep dynamics which, in turn, are known to play a crucial role in health.

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Sukhi Vanessa Sendanayake

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Thesis by Monograph

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Country: Sri Lanka

Supervisor/s: David Thambiratnam (Queensland University of Technology), Hung Chan (Queensland University of Technology), Nimal Perera (Robert Bird Group)

Thesis title:

Seismic Mitigation of Steel Modular Buildings Using Novel Inter-Modular Connections

Description:

This research proposes novel inter-modular connections to enable the safe and reliable performance of modular building structures under seismic actions. The proposed connections are designed to shift possible failure locations away from critical structural members to provide effective seismic mitigation. Ultimately, this would result in a purely modular building frame that would be capable of resisting gravity and lateral loads without supplementary concrete shear cores or walls.

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Supreetha Paleyanda Ponnappa

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Thesis by Publication

Thesis DOI: <http://doi.org/10.5204/thesis.eprints.198047>

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Country: India

Supervisor/s: Prashant Sonar (Queensland University of Technology), Anthony O'Mullane (Queensland University of Technology), Godwin Ayoko (Queensland University of Technology)

Thesis title:

Electropolymerization Studies of Conjugated Monomers and their Biosensor Applications

Description:

This project was a step forward in developing new electrochemical Platform to investigate the biosensing application of conjugated polymers. Dr Supreetha has used an effective technique called electropolymerization to synthesise the conjugated polymers directly on the surface of various conducting substrates such as Glassy Carbon (GC), Indium Tin Oxide (ITO) and Flexible ITO (FITO) using a range of different bifunctional and trifunctional monomers. Electrodeposited conducting polymer thin films are directly utilised for capturing biomolecules. In this work, customised polymer films are used to capture miRNA, Nucleic acid and Ovarian Cancer Cells and act as a biomarker. This work could benefit the community upon further optimisation of the parameters.

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Country: Bangladesh

Supervisor/s: Don Vilathgamuwa (Queensland University of Technology), Michael Cholette (Queensland University of Technology)

Thesis title:

Slip Control for Trains Using Induction Motor Drive

Description:

This research is a railway industry related project, which is concerned with finding improvements in railway traction and wheel slip control in electric drives. A new approach was developed to detect the unknown and immeasurable rail surface. And a novel identification scheme was used to identify the best operating friction level. A new switching controller was operated by the induction motor controller under all possible train operating conditions. Aspects of the study were validated in the laboratory experiment. By exploring the in-rail track condition detection, the best drive torque and desired slip in the railway field were identified.

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Talara Berry

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Country: Australia

Supervisor/s: Wendy Miller (Queensland University of Technology), Robin Drogemuller (Queensland University of Technology), Don Sands (Synengco)

Thesis title:

Simulating Thermal Energy Storage for a Solar Absorption Chiller in a Subtropical Climate

Description:

To increase knowledge about reducing the carbon footprint of air conditioning in buildings, this study simulated and compared solar collector and thermal storage options and configurations for a solar absorption chiller to maximize the use of solar resources. From these findings a design was found that could supply cooling to a commercial building in Brisbane at 99.7 percent solar fraction.

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Thaer Farag Ali Ali

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Country: Iraq

Supervisor/s: Alan Woodley (Queensland University of Technology), Shlomo Geva (Queensland University of Technology)

Thesis title:

A Novel Hybrid Method for Synthesising Missing Pixels in Remote Sensing Imagery

Description:

This project aims to develop a novel hybrid missing pixel interpolation method that can predict missing pixels with high accuracy in multiple changing environments. The research in this thesis contributed to the task in three ways: it developed datasets that cover homogeneous and heterogeneous with no/change datasets; it introduced a method that combined geostatistics and multi-temporal linear relations between pixels; and it presented a new way for improving the interpolating performance in multiple changing environments ensuring that the interpolation method only predicts the missing pixel from its environmental class.

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Thananjayan Sivaprakasam

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Country: Sri Lanka

Supervisor/s: Mahadeva Mahendran (Queensland University of Technology), Kesawan Sivakumar (Queensland University of Technology)

Thesis title:

Thesis information is under embargo.

Description:

Thesis information is under embargo.

Introduction

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Thanh Tan Nguyen

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Thesis by Publication

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Country: Czech Republic

Supervisor/s: Kerrie Mengersen (Queensland University of Technology), You-Gan Wang (Queensland University of Technology), Nan Ye (Queensland University of Technology), Peter Bartlett (Queensland University of Technology), Yasin Abbasi-Yadkori (Queensland University of Technology)

Thesis title:

Selected Non-convex Optimization Problems in Machine Learning

Description:

Non-convex optimization is an important and rapidly growing research area. It is tied to the latest success of deep learning, reinforcement learning, matrix factorization, and more. As a contribution to this area, this thesis provides analyses and algorithms for three important problems. The first one is optimization of noisy functions defined on a large graph, which is useful for AB testing, digital marketing. The second one is learning a convex ensemble of basis models, with application in regression and classification. The last one is optimization of ResNet with restricted residual modules, which leads to better performance over standard ResNet.

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Thirunavukarasu Balasubramaniam

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Thesis by Publication

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Country: India

Supervisor/s: Richi Nayak (Queensland University of Technology), Yuchu Tian (Queensland University of Technology)

Thesis title:

Matrix/Tensor Factorization with Selective Coordinate Descent: Algorithms and Output Usage

Description:

With advanced data collection methods and the tremendous growth in the number of online users, multi-context data has become ubiquitous and its analysis for knowledge discovery has become inevitable. Matrix/tensor factorizations are commonly used knowledge discovery methods. This thesis developed selective Coordinate Descent (SCD) algorithms that select only a few important elements during the factorization process to minimize the computational complexity and to improve the efficiency of factorization. Moreover, this thesis exploits various ways the output of SCD factorization can be applied in several knowledge discovery tasks like pattern mining, clustering, outlier detection, and recommender systems.

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Thomas Noble

Doctor of Philosophy

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Thesis by Publication

Thesis DOI: <http://doi.org/10.5204/thesis.eprints.205533>

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Country: Australia

Supervisor/s: Sagadevan Mundree (Queensland University of Technology), Brett Williams (Queensland University of Technology), Anthony Young (University of Southern Queensland), Col Douglas (Department of Agriculture and Fisheries), Damien White (Australian Mungbean Company)

Thesis title:

Molecular Characterisation and Identification of *Pseudomonas Savastanoi* PV. Phaseolicola, Infecting Mungbeans in Australia

Description:

This research explores population genetics for the bacterial pathogen *Pseudomonas savastanoi* pv. phaseolicola, which causes halo blight disease in its host mungbeans (*Vigna radiata*). The pathogen and host populations were investigated at a board scale using field and glasshouse studies and in detail using molecular biology techniques including qPCR and next-generation sequencing. The study found both the bacterial pathogen and host (mungbean) to have highly conserved genetic backgrounds. This will make it easier for breeders to target critical resistance genes to prevent the infection of the halo blight pathogen in future cultivars.

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Tianwei He

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Country: China

Supervisor/s: Aijun Du (Queensland University of Technology),
Geoffrey Will (Queensland University of Technology)

Thesis title:

Computational Discovery and Design of Nanocatalysts for High Efficiency Electrochemical Reactions

Description:

This thesis reports a computational discovery and design of highly efficient electrocatalysts for various of electrochemical reactions. The method is based on the Density Functional Theory (DFT) by using Vienna ab initio simulation package (VASP). This project is a step forward in developing the low-cost, high activity, selectivity, stability and scalability for the electrochemical reactions, which could make a contribution to the global-scale green energy system for a clean and sustainable energy future.

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Tien Dung Nguyen

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Thesis by Monograph

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Country: Vietnam

Supervisor/s: Subramanian Sridharan (Queensland University of Technology), Clinton Fookes (Queensland University of Technology)

Thesis title:

Multimodal Emotion Recognition Using Deep Learning Techniques

Description:

This thesis investigates the use of deep learning techniques to address the problem of machine understanding of human affective behaviour and improve the accuracy of both unimodal and multimodal human emotion recognition. The objective was to explore how best to configure deep learning networks to capture individually and jointly, the key features contributing to human emotions from three modalities (speech, face, and bodily movements) to accurately classify the expressed human emotion. The outcome of the research should be useful for several applications including the design of social robots.

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Venkateswara Reddy Narreddula

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Country: India

Supervisor/s: Stephen Blanksby (Queensland University of Technology), Nathan Boase (Queensland University of Technology), Steven Bottle (Queensland University of Technology)

Thesis title:

Development of Novel Derivatization Reagents for Analysis of Isomeric Fatty Acids by Liquid Chromatography-Mass Spectrometry

Description:

This project was a step forward in 'developing next-generation derivatization reagents for photodissociation mass spectrometry', an emerging mass spectrometry activation method for structural elucidation of lipid biomolecules. The method involves synthesis of photo labile derivatization reagents, derivatization with fatty acids and photodissociation of derivatives using 266 nm laser to elucidate subtle features of fatty acids. The thesis investigated the utility of fixed charge photo labile derivatives for identifying unusual fatty acids from lipid extract of vernix caseosa, and optimization of photodissociation efficiency of photolabile derivatives under 266 nm irradiation.

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Walpola Kankanamalage Nirmani Jayasundara

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Thesis by Monograph

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Country: Sri Lanka

Supervisor/s: David Thambiratnam (Queensland University of Technology), Hung Chan (Queensland University of Technology), Theanh Nguyen (Queensland University of Technology)

Thesis title:

Damage Detection of Arch Bridges Using Vibration Characteristics and Artificial Neural Network

Description:

This project developed a method to detect, locate and quantify damage in arch bridges using variations in their vibration characteristics and artificial neural network. The method was successfully tested on a few real-life arch bridges. Outcomes of this project will contribute towards the safety of our bridges.

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Country: Sri Lanka

Supervisor/s: Richi Nayak (Queensland University of Technology), Shlomo Geva (Queensland University of Technology)

Thesis title:

Unsupervised Text Mining: Effective Similarity Calculation with Ranking and Matrix Factorization

Description:

The popularity of the internet has increased the availability of digital text on social media, online forums, news broadcasting services, web blogs, and websites. Text mining is an effective approach to extract concepts, clusters, user communities, outliers and dynamic changes in the text collections. This thesis developed unsupervised machine learning techniques to identify these patterns by dealing with high dimensional and sparse text data. More specifically, this thesis developed effective measures of pairwise similarity and extended them in implementing clustering, outlier detection and cluster evolution methods to produce accurate and efficient outputs.

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Thesis by Monograph

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Country: New Zealand

Supervisor/s: Don Vilathgamuwa (Queensland University of Technology), Geoffrey Walker (Queensland University of Technology)

Thesis title:

Design, Modelling and Control of CLC Tee-Resonant Dual Active Bridge Converters

Description:

Tee-Resonant Dual Active Bridges are isolated, bidirectional, DC-DC converters that behave as voltage-controlled current sources, which makes them especially useful for battery charging applications. In this work, three new phase-shift modulation strategies are proposed that can improve the converter efficiency at high switching frequencies and enable loss-shifting between the primary and secondary sides. To model the converter, a large signal state-space model is derived and it is demonstrated to be useful for controller design. Lastly, a converter topology is proposed that enables direct integration of the converter with the grid, including power factor correction capability.

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Xiao Tang

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Thesis by Publication

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Country: China

Supervisor/s: Liangzhi Kou (Queensland University of Technology), Yuantong Gu (Queensland University of Technology)

Thesis title:

Computational Investigation of 2D Functional Materials for Nanoelectronics

Description:

This thesis investigated several new 2D functional materials and explored the feasibility for electronic applications. The first part of this thesis mainly focused on the prediction of new 2D materials that hold great promise for field effect transistors and spintronics. The second part systematically studied the possibilities of ferroelectric switching on magnetism tuning and gas sensing. The exploration of novel 2D materials and associated outstanding electronic/magnetic properties provided a deep understanding for the observed phenomena and paved the foundations for high-performance electronics.

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Thesis by Monograph

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Country: China

Supervisor/s: Guy Gable (Queensland University of Technology), Meng Zhang (Queensland University of Technology), Ji-Ye Mao (Renmin University of China)

Thesis title:

Can Online Reviews Represent Product Quality in the Digital Economy?

Description:

This thesis examines the usefulness of online reviews. The theoretical foundation is expectation-confirmation theory and cognitive biases. Propositions are evaluated using novel interpretivist agent-based modelling (simulation). The study first synthesizes a conceptualisation of review utility from fragmented online review literature, then conducts computational experiments to explain how, from a multilevel perspective, review utility can be impaired. It finds that customer's different product needs, the voluntary nature of consumer behaviour in submitting reviews, and the platform's algorithmic logic, are three main antecedents of review utility. This research progresses both our understanding of the online review quality concept, and of interpretive simulation.

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Yi Guo

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Thesis by Publication

Institute of Health and Biomedical Innovation (IHBI)

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Country: China

Supervisor/s: Zoran Ristovski (Queensland University of Technology), Branka Miljevic (Queensland University of Technology), Richard Brown (Queensland University of Technology), Svetlana Stevanovic (Deakin University)

Thesis title:

The Effect of Biodiesel Soot Structure on Diesel Particulate Filter (DPF) Performance

Description:

The research within this PhD thesis was concerned with understanding the role biodiesel soot structure has on the performance of diesel particle filters (DPF), their filtration efficiency, pressure drop and their ability to regenerate through the oxidation of accumulated soot. All DPF's have been designed for petrol-diesel particles and therefore the impact of changing fuel properties and emitted soot particles needed investigation. The research went beyond in exploration of diesel soot structure role, especially the attached oxygen functional groups at a molecular level, on the general mechanism of diesel soot and graphene-like material's oxidation, processes that have farfetched relevance.

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Country: China

Supervisor/s: Jose Alarco (Queensland University of Technology), Jawahar Nerkar (Queensland University of Technology), Peter Talbot (Queensland University of Technology)

Thesis title:

Study on Electronic Structure and Rate Performance of Olivine Phosphate Cathode Materials

Description:

This thesis has investigated a family of olivine phosphate battery materials using various spectroscopic techniques. The research has demonstrated that the surfaces of these materials display nanoscale Lithium depletion. The differentiated surface layers are responsible for many of the measured properties, which have so far been mostly attributed to the bulk of the compounds. In the case of LiFePO_4 , the surface layers also concentrate the dopants, which have been reported as beneficial for the electrochemical performance. The identified surface differentiation seems present in other families of battery materials. Its identification provides new insights on particle surface design for performance optimization.

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Yuanwen Zhang

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Country: China

Supervisor/s: Ziqi Sun (Queensland University of Technology),
Cheng Yan (Queensland University of Technology)

Thesis title:

Design of Two-Dimensional TiO₂ Based Nanomaterials for Sustainable Applications

Description:

This thesis focuses on the design of metal oxide based two-dimensional nanomaterials for various sustainable applications. The as-prepared 2D TiO₂-based nanomaterials and their hybrid compounds have been characterized and applied in different sustainable environmental and energy applications and showed superior properties. It is believed that the research and investigations on 2D nanomaterials based sustainable applications is of great significance for the further development of a green, sustainable, and environmentally friendly society.

Introduction

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Country: China

Supervisor/s: Wendy Miller (Queensland University of Technology), Veronica Garcia Hansen (Queensland University of Technology), Suvash Saha (University of Technology Sydney)

Thesis title:

Holistic Assessment of the Impacts of Building Energy Code Improvements on Australian Commercial Buildings

Description:

This thesis conducted a holistic investigation of the impacts of National Construction Code improvements on Australian commercial building performance from the energy, economic and environmental aspects. A customisation of the Best Code was established by comparing building energy codes in selected different countries. This study demonstrates significant financial and environmental benefits that Australia could achieve through more stringent building energy codes. The findings can inform the Australian government's consideration of National Construction Code improvements in the current Regulation Impact Assessment process for the future, and contribute to promoting reductions in Australian building energy use and greenhouse gas emissions.

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Zhe Liu

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Country: China

Supervisor/s: Huai Yong Zhu (Queensland University of Technology), Eric Waclawik (Queensland University of Technology), Sarina Sarina (Queensland University of Technology)

Thesis title:

Visible Light Driven Fine Organic Synthesis Using Plasmonic Materials as Photocatalyst

Description:

This research focuses on plasmonic materials as photocatalyst in fine organic synthesis under visible light irradiation. It was illustrated that noble metal (silver) nanoparticles performed well as photocatalyst in toluene oxidation reaction, which was not only achieved in mild reaction condition, but also controlled with high selectivity of product. In addition, titanium nitride (TiN) material and transition metal (Pd) nanoparticles both can be applied in the cleavage of lignin models with two different reaction pathways and product selectivity. Finally, the analysis of all the reaction mechanisms is significant for the further study of related organic synthesis.

Introduction

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Thesis by Publication

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Country: China

Supervisor/s: Christopher Drovandi (Queensland University of Technology), Anthony Pettitt (Queensland University of Technology), David Nott (National University of Singapore)

Thesis title:

Contributions to Bayesian Synthetic Likelihood

Description:

Complex statistical models pose a great challenge to practitioners because of methodological and computational difficulties. While traditional ways of running statistical inference are prohibitive for various reasons, new methods which rely only on model simulations have received increasing attention. This thesis develops novel simulation-based statistical inference methods that are both computationally efficient and robust allowing them to perform well on a wide variety of applications. We also provide statistical software to facilitate timely analyses.

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Vin Chia

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Thesis by Monograph

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Country: Malaysia

Supervisor/s: Yue Xu (Queensland University of Technology),
Ernest Foo (Queensland University of Technology)

Thesis title:

New Metrics for Assessing High-Quality Researchers

Description:

Assessing the research quality of individual academics and using this to predict their research performance are critical steps in their hiring and promotion. However, no existing metrics individually appear to be good predictors of research performance. This research explored existing research performance metrics in four research quality dimensions, productivity, impact, prestige and collaboration. It developed two new metrics and identified a metrics set which provides a better assessment of an academic's research performance and has higher predictive power than any existing metrics to identify future high-impact researcher.

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QUT Momentum

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- Research development workshops
- Publishing
- Professional development and career advice
- Grant writing
- Graduate Research eYearbook

QUT Graduate Research Alumni LinkedIn Group

Join the [QUT Graduate Research Alumni LinkedIn Group](#) to stay up to date with news, events and opportunities for HDR alumni.

Introduction

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Division of Research
and Innovation