8th INTERNATIONAL CONFERENCE ON INFORMATION AND COMMUNICATION TECHNOLOGY FOR THE MUSLIM WORLD

ICT4M 2021

Embracing eHealth in Facing the Challenges of IR 4.0 in the Muslim World

4th – 6th June 2021

KUANTAN, PAHANG MALAYSIA

http://ict4m.iium.edu.my/

AN INTERNATIONAL AWARD-WINNING INSTITUTION FOR SUSTAINABILITY

LEADING THE WAY
KHALIFAH • AMANAH • IQRA' • RAHMATAN LIL-ALAMIN

Program Book

In conjunction with

HEALTH & WELLBEING IN THE 4TH INDUSTRIAL REVOLUTION CHALLENGES IN THE COVID-19 ERA & IMPLEMENTING THE SEJAHTERA CONCEPT

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA
Garden of Knowledge and Virtue

3RD WORLD CONGRESS ON INTEGRATION AND ISLAMICISATION 2021

MENTAL HEALTH AND WELL BEING IN THE 4TH INDUSTRIAL REVOLUTION

04TH - 06TH JUNE 2021

STREAMED FROM IIUM KUANTAN CAMPUS

Table of Contents

ICT4M • June. 04-06, 2021

Conference Overview

ICT4M is a conference that gathers academicians, researchers, practitioners, professionals, and students to address the challenges of Information and Communication Technology (ICT) for the Muslim world. It is hosted by the Kulliyyah of Information and Communication Technology, International Islamic University Malaysia (KICT, IIUM). This conference has been conducted seven times so far with the most recent location in Kuala Lumpur, Malaysia on 23–25 July 2018.

For this upcoming event, ICT4M 2021 will be conducted as a virtual conference on the 4th – 6th of June 2021 at the IIUM Kuantan Campus due to the current COVID–19 pandemic crisis.

The theme for this year is "Embracing eHealth in Facing the Challenges of IR4.0 in the Muslim World". The ICT4M 2021 conference is to be conducted in collaboration with CENTRIS, IIUM and will be organized in conjunction with the 2021 World Congress for Integration and Islamization.

Areas of interest include, but are not limited to:

TRACK 1   Islamic Application for Ummah Development
TRACK 2   Information System Implementation, Governance and Challenges
TRACK 3   Commercialization and Entrepreneurship
TRACK 4   Innovation in Islamic Finance
TRACK 5   Computing Technologies and Applications
TRACK 6   Uncertain Data Management in Big Data and Open Data/Open Science
TRACK 7   Blockchain–Inspired Custodial Solutions

Organizing Committees

Advisor
Prof Dr. Abdul Wahab Abdul Rahman

Liaison
Dr. Akram Z. Khedir

Chairperson
Dr. Maznah Ahmad

Secretary
Dr. Nurhafizah Mahri

Treasurer
Dr. Nurul Liyana Mohamad Zulkufli

Publication
Dr. Sharyar Wani

Paper Submissions & Reviewers
Dr. Adamu Abu Bakar

Opening & Closing Ceremony
Dr. Madihah Sheikh Abdul Aziz

Program Chair
Dr. Suhaila Samsuri
Ts. Dr. Mohd Izzuddin Tamrin

Keynote Speakers
Ts. Dr. Mohd Izzuddin Tamrin

Workshops
Dr. Nor Saadah Md. Nor

Promotion
Dr. Zahidah Zulkifli

Website
Dr. Amir Aatieff

Sponsorship
Dr. Najhan Muhamad Ibrahim

Special Task
Dr. Murni Mahmud

Registration
Dr. Sharifah Nur Amirah Sharif Abdullah

Secretariat
Humaiz Shaikh

Administration & Logistics
Zenita Arryani Bt. Tiyunin

Messages

Professor Dr. Abdul Wahab Abdul Rahman
Advisor
International Islamic University Malaysia

Assalamualaikum,

Alhamdulillah, all praises be to Allah subhanahu wata'ala

The theme for the International Conference on Information & Communication Technology for The Muslim World (ICT4M 2021) is "Embracing eHealth in Facing the Challenges of IR4.0 in the Muslim World".

The ICT4M 2021 conference is to be conducted in collaboration with CENTRIS, IIUM and will be organized in conjunction with the 2021 World Congress for Integration and Islamization.

ICT4M 2021 provides new avenue and effort from the Kulliyyah of Information and Communication Technology (KICT) in looking at new opportunity and hopes to be able to gather researchers, educators and practitioners in this multidisciplinary event to share and discuss on their latest research findings, services and products that utilize and empower the transformation of the Ummah.

Since 2001 ICT4M was conducted in the Senate Hall of IIUM, Gombak, in the same year of the establishment of the Kulliyyah of Information and Communication Technology (KICT). The name of the conference then was International Conference on Information Systems and Islam. The second cycle of ICT4M was held in Kuala Lumpur, followed by ICT4M 2010 in Jakarta, Indonesia, and then ICT4M 2013 in Morocco, followed by ICT4M 2014 in Sarawak, Malaysia, ICT4M 2016 was held in Jakarta, Indonesia for the second times, and then back again to IIUM Gombak in 2018. We couldn't have ICT4M 2020 due to the Pandemic and this year is the 8th ICT4M 2021.

The success of ICT4M 2021 depends on the effort and contribution of all involved in making ICT4M 2021 a reality and with that we would like to convey our gratitude and thanks to all parties involved in planning, preparing this conference, the conference committee members from KICT and WCII. We do hope the participants will benefit from the discussion in this conference and take the opportunities for networking. May Allah bless our conference and help us going through this pandemic.

MESSAGES FROM LIAISON

Assoc. Professor Dr. Akram Zeki
Liaison
International Islamic University Malaysia

Assalamualaikum w.b.t. and greetings to all,

Alhamdulillah, all praise to be to Allah Subhanawataála, by whose Grace and Blessings, we are able to be here today virtually, at the 8th International Conference on Information and Communication Technology for the Muslim world (ICT4M). ICT4M conference is unique of its kind, it aims to gathers academicians, researchers, practitioners, professionals, and students to address the challenges of Information and Communication Technology (ICT) for the Muslim world.

It was great opportunity to serve the ICT4M in 2021, the first cycle of the conference started with the establishment of KICT and ICT4M2021 comes with the celebrating the 20-yearth anniversary of kulliyyah. The theme for this year is "Embracing eHealth in Facing the Challenges of IR4.0 in the Muslim World". The ICT4M 2021 conference is to be conducted in collaboration with CENTRIS, IIUM and will be organized in conjunction with the 2021 World Congress for Integration and Islamization (WCII).

In 2013, the university has initiated and organised a well-attended first World Congress on Integration and Islamicisation of Acquired Human Knowledge in IIUM, Gombak, followed by the second session of the same congress which was held in 2016 in IIUM Kuantan. The university has decided to hold the third session of WCII in Kuantan again and it was my pleasure to be witness and to serve this session of WCII.

The 3rd WCII invited KICT to organize the ICT4M with the conjunction with 3rd WCII. WCII-3 and ICT4M-8 which were supposed to be in 2020 but with current pandemic of COVID-19, the conference was forced to be postpone to 2021 and to be hold virtually. (Allah knows what is the best).

I would also like to congratulate the organizing committee of both WCII-3 and ICT4M-8. It was a very great opportunity to collaborate and work together and to meet physically or virtually and conduct fruitful discussion in the last 2 years until we come here today in this great event, May Allah blesses all efforts.

Finally, I would like to thank all keynote speakers who have shared their knowledge and experiences with us, as well as all presenters for contributing their papers in this event, Jazakum Allahu Khayran.

Dr. Maznah Ahmad
Chairperson
International Islamic University Malaysia

Assalamualaikum,

Alhamdulillah, all praises be to Allah subhanahu wata'ala

Thank you for your registration with ICT4M2021 (previously named ICT4M2020) which takes place virtually from IIUM Gombak, Malaysia on 4-6 June 2021. This time, ICT4M is organized in conjunction with the 2021 World Congress for Integration and Islamization organized with The Office of Islamisation (CENTRIS), IIUM . The theme for ICT4M2021 is "Embracing eHealth in Facing the Challenges of IR4.0 in the Muslim World".

As a conference that gathers academicians, researchers, practitioners, and students to address the challenges of ICT within the Muslim world, ICT4M serves as a valuable platform to share ideas and interact among its participants. After being organized seven times, and attended by more than 600 ICT scholars from countries around the world, ICT4M continues to provide a forum for ICT professionals to engage in research and development and presenting their latest works with other researchers and strengthen the collaboration among Muslim Scholars.

ICT has been identified as a critical element that is essential and pervasive in our daily life. ICT is a forte that complements our role and responsibilities as leaders, professionals, workers and students of Islam. Information is needed to effectively perform teaching, learning and delivering Da'wah, and its practical implementation. As such, ICT and its infrastructure has become a major component in the organizations, schools and mosques. To ensure ethical and compliant to the Islamic code of practice in ICT, the main Islamic principles should always be applied as guidelines.

The COVID-19 pandemic has made the face-to-face gatherings and international travels impossible, and have forced us to defer the ICT4M2020 conference to a new date, thus changing from ICT4M2020 to be ICTM2021. The travel restriction has also cancelled Kuantan as our conference venue for ICT4M. However, this pandemic has also shown us that human beings are always a creative and resilient creature. Despite all the circumstances faced, we will take the challenge to make the conference be a success.

As part of the organizers of ICT4M2021, I would like to express my appreciation to all those who have strived to contribute and provide continuous support for the ICT4M2021 conference. I would like to also congratulate all participants who have together make history by being part of this virtual conference. Let us look forward to the virtual sessions with all the participants from wherever they are around the globe.

Keynote Speakers

Tan Sri Professor Dr Kamal Hassan
Former Rector International Islamic University Malaysia

Professor Emeritus Tan Sri Dr. Mohd. Kamal Hassan was born in Pasir Mas, Kelantan in 1942. As a youth, he attended Sultan Ismail School and College (1950-1960) in Kota Bharu and Victoria Institution (1061-1962) in Kuala Lumpur. He obtained a B.A. (Hons) First Class (Islamic Studies) from Universiti Malaya (U.M., 1965), and later attained his M.A. (1970), M.Phil. (1972) and PhD (1976) degrees from Columbia University, New York, specialising in Contemporary Islamic Thought in Southeast Asia. In 2010, the Ministry of Higher Education Malaysia conferred upon Professor Kamal the title "Profesor Ulung". Profesor Ulung (Distinguished Professors) in Malaysia are state-owned icons, as their contributions transcend the institutions they represent. The title is the highest honour conferred upon outstanding senior professors in Malaysia in acknowledgement and appreciation of their contributions to the nation. To date, only five professors have been conferred with this very rare and distinguished title. Professor Kamal served as Distinguished Professor at the International Institute of Islamic Thought and Civilisation (STAC), IIUM from 2011 to 2017, when he retired, after more than 50 years (35 years at IIUM) of sterling service to Malaysian education.In 2017, Professor Kamal was again honoured by the Ministry of Higher Education with the title "Tokoh Anugerah Akademik Negara" (National Academic Figure). To date, he is the only academic that has received both recognitions, which are the highest academic accolades awarded by the Ministry of Education for outstanding academics in Malaysia. In 2018 IIUM conferred him the title Professor Emeritus. He is currently a volunteer consultant for Institut Latihan Islam Malaysia (ILIM) (the Institute of Islamic Trainings Malaysia) and the new Chairman for Lembaga Penasihat Penyelarasan Pelajaran dan Pendidikan Agama Islam (LEPAI) (Islamic Religious Education Coordination and Advisory Board).

KEYNOTE SPEAKER 2

Professor Dr Mohammad Hashim Kamali
Funding CEO, International Institute of Advance Islamic Studies

Professor Mohammad Hashim Kamali is founding CEO of the International Institute of Advanced Islamic Studies, Malaysia (2007—continuing), and a world renowned scholar in his field of specialisation. He served as Professor of Islamic Law and Jurisprudence at the International Islamic University Malaysia (IIUM, 1985–2004); and was Dean of the International Institute of Islamic Thought and Civilisation (ISTAC, 2004–2006). Currently he is Senior Fellow at the Institute of Strategic and International Studies (ISIS) Malaysia, a Senior Fellow of the Academy of Sciences of Afghanistan, and also Senior Fellow of the Royal Academy of Jordan. He serves on the International Advisory Board of thirteen academic journals published in Malaysia, USA, Canada, Kuwait, India, Australia and Pakistan. Professor Kamali has served as a member and sometime Chairman of the Constitution Review Commission of Afghanistan (2003); as a UN consultant on constitutional reforms in Afghanistan, the Maldives, and Iraq; and currently advises the UN on a new constitution for Somalia. He graduated from Kabul University in Afghanistan with 1st Class Honours in Law and Political Science (1965), and served as Public Prosecutor with the Afghan Ministry of Justice for two years. He completed his LLM in Comparative Law, and Ph.D in Islamic and Middle Eastern Law, at the University of London (1969–1976); following which he was employed as a broadcasting support staff by the BBC in Reading, UK (1976–1979). Dr. Kamali was Assistant Professor at the Institute of Islamic Studies, McGill University in Montreal (1979–84); and a Research Associate with the Canada Council for Social Science and Humanities (1984–1985). He has been a Visiting Professor at Capital University, Ohio (1991), as well as Visiting Professor at the Institute for Advanced Study in Berlin, Germany (2000–2001).

KEYNOTE SPEAKER 3

Professor Dr Omar Kasule
King Fahad Medical City, Kingdom of Saudi Arabia

Dr. Omar Hasan Kasule graduated from Makerere University in Uganda and subsequently obtained his postgraduate training in public health including a doctorate in epidemiology from Harvard University. Additionally, Dr. Kasule had obtained a certification in Arabic and Islamic studies from Bilal Institute in Kampala, Uganda. From 1987-1995, Dr. Kasule worked in USA involved in managing development projects involving education and health in North America and the Caribbean and clinical epidemiology as a Quality Assurance Consultant in several states in USA. After working in USA for few years, Dr. Kasule accepted a position at the newly established Islamic university in Malaysia where from (1995-2005) he held the appointments of Professor of Medicine, Deputy Dean for Research and Post Graduate, founding Chief Editor of the International Medical Journal www-e-imj.com. Prof. Kasule's teachings emphasize the study and practice of medicine that integrates social and ethical values into the medical curriculum. He has had 7 years' experience conducting Problem-based learning sessions for undergraduates. Since June 2005, Dr. Kasule has been on the Faculty of Medicine of the University of Brunei where he teaches undergraduate students courses on epidemiology, biostatistics, and medical ethics. He teaches postgraduate courses on advanced research methods and evidence-based health policy and practice. The King Fahd Medical City in Riyadh was fortunate in recruiting Dr. Kasule to its Faculty of Medicine in 2009.Dr. Kasule is a consultant for many hospitals and faculties of medicine in the South East Asia region on Islamic Medicine and integration of Islam in medical practice and teaching. His pioneering work across Indonesia, Malaysia and more recently Brunei has transformed the medical education in significant number of the medical schools in SE Asia and this has resulted in Prof Kasule being a frequent invited scholar all over the globe.

KEYNOTE SPEAKER 4

Dr Aasim Padella,
Faculty of Medicine, Chicago University

Dr. Aasim Padela is an internationally-recognized thought and research leader in the fields of Muslim health disparities and Islamic Bioethics. At present, he is Professor of Emergency Medicine, Bioethics and the Medical Humanities, as well as Vice Chair of Research and Scholarship in the Department of Emergency Medicine, at the Medical College of Wisconsin. He also directs a non-profit platform for research, education and dialogue, the Initiative on Islam and Medicine.Dr. Padela holds an MD from Weill Cornell Medical College and received an MSc in Healthcare Research from the University of Michigan. He completed residency in emergency medicine at the University of Rochester, and clinical medical ethics training at the MacLean Center for Clinical Medical Ethics at the University of Chicago. He also holds Bachelor's degrees in Biomedical Engineering and Classical Arabic from the University of Rochester, and has studied Islamic theology and law in seminary and academic settings nationally and abroad.As a scholar, Dr. Padela's focus is on the intersections of healthcare, bioethics, and religion. Overall, his scholarship aims at improving health and healthcare through better accommodating religious values in healthcare delivery.

KEYNOTE SPEAKER 5

Professor Dr Abdul Wahab Abdul Rahman
Faculty of ICT, International Islamic University

Professor Abdul Wahab started his career with Hewlett Packard Singapore as a production engineer and was then given the post of R&D Project Manager since 1982. He has worked in Singapore and Colorado, USA prior to joining the faculty member of Nanyang Technological University, Singapore in 1990.In 2009 He joined the Kulliyyah of Information and Communication Technology, International Islamic University, Malaysia. Professor Abdul Wahab had published more than 100 conferences, Journal, patent and book chapters in areas of digital and optical computing, signal processing, Artificial Intelligence, and Neuroscience and computing.He has taught the digital system design courses, computer organizations and architectures, Research methodologies, industrial attachment coordinator. His areas of expertise covers digital system design based on reconfigurable logics, speech processing especially in the areas of speech enhancement, speech recognition and speaker identification, and integrating signal processing with Fuzzy neural networks (especially in the areas of cerebellum).His current research are in the areas of understanding and analyzing brain developmental disorder using the EEG and ECG as neuro-cardio physiological data modeling of the brain and the heart. Professor Abdul Wahab is also the board member of Mercy Relief Singapore since 2003 and was also the vice chairman of mercy relief Singapore from 2008 to 2012.In 2008 he received the Friends and goodwill award from the Singapore SOKA Association for humanitarian contribution and a long service award from the Ministry of Community Development and Sports (MCDS) on 2004. He was also the Winner of the Rotary – ITE Alumni Professional Achievement Award in 2003, which was also named as the Paul Harris Fellow of the Rotary Foundation of the Rotary International.In 2006 he was awarded the most popular teacher award in school of computer engineering, NTU.

KEYNOTE SPEAKER 6

Assoc. Professor Dr Nora Mat Zin
Kulliyyah of Medicine, International Islamic University Malaysia

Graduated as medical doctor with total experience of almost 23 years in medical and health services. Certified psychiatrist with more than 15 years' experience in managing mental health and psychiatric disorders at inpatient and outpatient clinical setting. Has excellent background in managerial post, teaching, research training of the medical professional in the field of psychiatry. Skilled psychiatrist in the area of psychotherapy and applied psychology and additional experienced in occupational mental health.

ICT4M 2021
MALAYSIA

Embracing eHealth in Facing the Challenges of IR4.0 in the Muslim World

Conference Program

DAY 1 CONGRESS
4th June 2021 | Friday

TIME	PROGRAMME/EVENT
8:00 am – 9:00 am	Registration through link
9:00 am – 11:15 am	**Launching Ceremony** **Welcome Keynote:** **Professor Emeritus Tan Sri Dato' Dzulkifli Abdul Razak** *Rector of International Islamic University Malaysia* **Keynote Speaker:** **YBhg. Tan Sri Dato' Seri Dr. Noor Hisham bin Abdullah** *Director-General of Health, Ministry of Health Malaysia* Title: Health and Wellbeing in the 4th Industrial Revolution Challenges in the COVID-19 Era and Implementing the Sejahtera Concept.
11:15 am – 12:15 pm	**PLENARY 1** **Speaker:** **Tan Sri Emeritus Prof Dr Mohd Kamal Hassan** *Former Rector, International Islamic University Malaysia* Title: Releventisation of the Revealed Knowledge to Medicine and Healthcare: The Concept, the Need and the Applications of Islamicisation in Medicine and Healthcare Practices.
3:00 pm – 5:00 pm	**Parallel Sessions 1**

Congress	Themes/Tracks	Breakout Room
WCII	Humanising Technology in line with the Principles of Maqasid al-Shari'ah	1
WCII	Harm Reduction: Balancing Between Biomedical Advances and Shari'ah Principles	2
WCII	Cyberpsychology and Wellbeing in the Age of 4th Industrial Revolution	3
WCII	Integration of Spirituality & Mental Health	4
WCII	Poster presentation show room	5
ICT4M	Track 1: Islamic Application for Ummah Development	6
ICT4M	Track 2: Information System Implementation, Governance and Challenges	7
ICT4M	Track 3: Commercialisation and Entrepreneurship	8

TIME	PROGRAMME/EVENT
8:00 am – 8.50 am	Registration through link

Theme: Humanising Technology in Line with the Principles of Maqasid Al-Shari'ah.

| 9:00 am – 10:00 am | PLENARY 2 (9.00pm, 4th June 2021 at Wisconsin Time)
Speaker:
Associate Professor Dr. Aasim Padella
Emergency Physician, Muslim health disparities and Islamic Bioethics, Faculty of Medicine, Chicago University |

Theme: Harm Reduction: Balancing between Biomedical Advances and Shari'ah Principles.

| 10.15 am – 11.15 am | PLENARY 3
Speaker:
Prof. Dr. Mohammad Hashim Kamali
Funding CEO, International Institute of Advanced Islamic Studies |
| 11.30 am – 1.30 pm | **Parallel Sessions 2** |

Congress	Themes/Tracks	Breakout Room
WCII	Humanising Technology in line with the Principles of Maqasid al-Shari'ah	1
WCII	Harm Reduction: Balancing Between Biomedical Advances and Shari'ah Principles	2
WCII	Cyberpsychology and Wellbeing in the Age of 4th Industrial Revolution	3
WCII	Integration of Spirituality & Mental Health	4
WCII	Poster presentation show room	5
ICT4M	Track 4: Innovation in Islamic Finance	6
ICT4M	Track 5: Computing Technologies and Applications	7
ICT4M	Track 6: Uncertain Data Management in Big Data and Open Data/Open Science	8

| 02.30 pm – 3.30 pm | PLENARY 4 (9.30am at Riyadh Time)
Speaker:
Prof. Dr. Omar Hassan Kasule
Professor in Epidemiology & Islamic Medicine, King Fahad Medical City, Riyadh, Kingdom of Saudi Arabia |
| 3.30 pm – 5.00 pm | **Parallel Sessions 3** |

Congress	Themes/Tracks	Breakout Room
WCII	Humanising Technology in line with the Principles of Maqasid al-Shari'ah	1
WCII	Harm Reduction: Balancing Between Biomedical Advances and Shari'ah Principles	2
WCII	Cyberpsychology and Wellbeing in the Age of 4th Industrial Revolution	3
WCII	Integration of Spirituality & Mental Health	4
WCII	Poster presentation show room	5
ICT4M	Track 1: Islamic Application for Ummah Development	6
ICT4M	Track 2: Information System Implementation, Governance and Challenges	7
ICT4M	Track 3: Commercialisation and Entrepreneurship	8

TIME	PROGRAMME/EVENT
8:00 am – 9.00 am	Registration through link

Theme: Cyberpsychology and Wellbeing in the age of 4th Industrial Revolution.

9.00 am – 10.00 am	PLENARY 5 Speaker: **Associate Professor Dr. Nora Mat Zin** Consultant in Psychiatry, Department of Psychiatry, Kulliyyah of Medicine International Islamic University Malaysia
10.15 am – 11.15 am	PLENARY 6 Speaker: **Professor Dr. Abdul Wahab Abdul Rahman** Professor in Neuroscience Computer Engineering and the Dean of Kulliyyah of Information and Communication Technology, International Islamic University Malaysia
11.30 am – 12.30 pm	**Parallel Sessions 4**

Congress	Themes/Tracks	Breakout Room
WCII	Humanising Technology in line with the Principles of Maqasid al-Shari'ah	1
WCII	Harm Reduction: Balancing Between Biomedical Advances and Shari'ah Principles	2
WCII	Cyberpsychology and Wellbeing in the Age of 4th Industrial Revolution	3
WCII	Integration of Spirituality & Mental Health	4
WCII	Poster presentation show room	5
ICT4M	Track 4: Innovation in Islamic Finance	6
ICT4M	Track 5: Computing Technologies and Applications	7
ICT4M	Track 6: Uncertain Data Management in Big Data and Open Data/Open Science	8

| 12.30 pm – 1.30 pm | **Closing Ceremony and Award Announcement**
Professor Dr Kamaruzzaman Yunus
Organising Chairman of 3rd World Congress on Integration & Islamicisation 2021 and the Director of Campus Director, International Islamic University Malaysia, Kuantan. |

ICT4M • June. 04-06, 2021

TRACK: IAUD

Date: Friday, 4th June 2021

Time: 3pm – 5pm

Venue: Breakout Room 6

Moderator: Dr Mohd Izzuddin
Mohd Tamrin

ISLAMIC APPLICATION FOR UMMAH DEVELOPMENT

PID	PAPER TITLE	AUTHORS
1A	Assessment of the Influence of ICT Facilities for Sustainability of Modern Teaching Excellence in Education	Ibrahim Dahiru Idriss, Jaafar Zubairu Maitama, Usman Haruna, Adamu Mamman Adamu, Abubakar Idriss Barde and Adamu Abubakar Ibrahim
3A	The Internet of Everything from Islamic Perspective	Ismail Faizi
33A	Contribution of Information Technology (IT) in Conceptualizing the Qur`anic Approach on Programmed Systems of Biology	Ibrahim Shogar and Mohd Zulfaezal Che Azemin
34A	The Effects of Persuasive Technology on End-Users' Information Security Awareness	Mohammed Abdullah Bawazir, Murni Mahmud and Nurul Nuha Abdul Molok
41A	Neurofeedback training to improve the efficiency of wudu to promote psychological wellbeing: A conceptual study.	Nurhafizah Mahri and Nurul Liyana Mohamad Zulkufli
14B	Brain Behaviour Analysis of Mental Stress Before and After Listening to Quranic Recitation Based on EEG Signals	Hana Silabdi, Raini Binti Hassan, Nurhafizah Binti Mahri and Norzaliza Binti Md Nor

PARALLEL SESSION 1
IS IMPLEMENTATION, GOVERNANCE AND CHALLENGES

TRACK: ISIGC

Date: Friday, 4th June 2021

Time: 3pm – 5pm

Venue: Breakout Room7

Moderator: Dr Ali Amer Alwan

IS IMPLEMENTATION, GOVERNANCE AND CHALLENGES

PID	PAPER TITLE	AUTHORS
11A	Constructing a Ubiquitous Learning Framework of E-Commerce Activities for Skill Development	Zainab Abu Bakar, Wan Fatimah Wan Ahmad and Nazlena Mohamad Ali
39A	Implementation of Open Government Data in Asian Countries: A Review	Noor Hazwani Mohamad Puad, Mohd Adam Suhaimi and Husnayati Hussin
40A	Exploring the Roles and Leadership Behavior of Chief Information Officers (CIOs): Case Studies of Two Public Universities in Malaysia.	Hussain Waheed and Husnayati Hussin
49A	Secure SMEs: Cyber Security End User Incidents Reporting System For SMEs	Nurul Nuha Abdul Molok, Narisha Aziz and Nurin Sharzana Sharudin
61A	Using UTAUT Model to Determine Factors Affecting IoT Usage in Private Universities in Saudi Arabia	Eman Almetere, Prof. Dr. Nur Naha Binti Abu Mansor and Dr. Beni Widarman Bin Yus Kelana

PARALLEL SESSION 1
COMMERCIALIZATION AND ENTREPRENEURSHIP

TRACK: CE

Date: Friday, 4th June 2021

Time: 3pm – 5pm

Venue: Breakout Room 8

Moderator: Dr Akeem Olowolayemo

COMMERCIALIZATION AND ENTREPRENEURSHIP

PID	PAPER TITLE	AUTHORS
7B	Prediction of Agricultural Emissions in Malaysia Using the ARIMA, LSTM, and Regression Models	Maliha Homaira and Raini Hassan
8B	The Impact of Covid-19 on Adolescent Entrepreneurial Interest: A Case Study at UTHM Johor Malaysia	Faisal Bin Husen Ismail
13B	E-Bazaar: Farmers & Consumers E-Commerce System	Mohammad Tahmid Lodi, Mujib Mehran and Zahidah Zulkifli
15B	Virtual Tourism in Sudan	Samir Adil Babiker, Omer Faez Salem Ba Jamel and Zahidah Zulkifli
18B	RFID Application in Courier Services	Maznah Ahmad, Mohamad Akmal Abdul Karim and Muhammad Hafiz Aizuddin Zaidi

PARALLEL SESSION 2
INNOVATION IN ISLAMIC FINANCE

TRACK: IIF

Date: Saturday, 5th June 2021

Time: 11:30am – 1:30pm

Venue: Breakout Room 6

Moderator: Dr Mohd Izzuddin Mohd Tamrin

INNOVATION IN ISLAMIC FINANCE

PID	PAPER TITLE	AUTHORS
4B	Revitalising Dinar and Dirham: Monetary Analysis of the advancements of Cryptocurrency in Islamic Financial System	Afdzaal Jehabar Sadiq and Mohamed Aslam Akbar
19B	Secure Expense Manager: A Mobile Application for Managing Expenses	Muhammad Faris Ahmad Sabri, Muhammad Luqmanulhakim Sa'Ari and Nurul Nuha Abdul Molok
21B	Themes and Topics in Information Dissemination Models adopted by Muslim Scholars on Cryptocurrencies	Roslina Othman, Mohamad Fauzan Noordin, Nadzrah Ahmad, Salina Kassim and Muhamad Aizat Nazmi Mohd Nor Hamin
23B	Blockchain-based Zakat Collection to Overcome the Trust Issues of Zakat Payers	Muhammad Nur Aqmal Khatiman, Muhammad Salikin Ismail and Norzariyah Yahya

PARALLEL SESSION 2
COMPUTING TECHNOLOGIES AND APPLICATIONS

TRACK: CTA

Date: Saturday, 5th June 2021

Time: 11:30am – 1:30pm

Venue: Breakout Room 7

Moderator: Dr Amir 'Aatieff Amir

Hussin

COMPUTING TECHNOLOGIES AND APPLICATIONS

PID	PAPER TITLE	AUTHORS
10A	EEG Features for Driver's Mental Fatigue Detection: A Review	Muhammad Afiq Ammar Kamaruzzaman, Marini Othman, Raini Hassan and Abdul Wahab Abdul Rahman
27A	Identifying Stress Level among Gamers using Electroencephalogram (EEG) Machine	Sheik Dawood Mohamed Rafi, Norzaliza Md Nor and Muhammad Arif Othman
32A	Analysis of Video Game Design Styles Based on Neuro-Affective Computational Model	Ayub Abdul Rahman, Hamwira Sakti Yaacob and Mohd Syarqawy Hamzah
35A	Improving Requirements Quality by Boilerplates Conformance Checking	Siti Syara Aiman Seh Wali, Sarah Husna Haizad and Azlin Nordin
3B	Respecting Patient Privacy with Federated Artificial Intelligence	Mohd Adli Md Ali, Edre Mohammad Aidid and Hafidzul Abdullah

BIG DATA AND BLOCKCHAIN APPLICATIONS

PID	PAPER TITLE	AUTHORS
4A	Empirical Investigation on the Barriers of Adoption of Cryptocurrency-Based Transaction from an Islamic Perspective	Abulfathi Ibrahim Saleh Al-Hussaini, Adamu Abubakar Ibrahim, Mohamad Fauzan Noordin and Hazwani Mohadis
6A	A Framework for Adopting Blockchain Technology in Medical Health Records in Nigeria	Abulfathi Ibrahim Saleh Al-Hussaini and Adamu Abubakar Ibrahim
16B	Sensei No Kuruma : Car Advising System with Digital Forensic Evidence	Hafizah Mansor, Nur Shahirah Hafizah Mohd Shani and Arina Pradu
27B	Role-Based Blockchain-inspired Concept for Managing and Monitoring Tasks Associated with Incentives	Adamu Abubakar Ibrahim
28B	A Systematic Literature Review on Emotional Text for Malay Corpus	Hafizuddin Muhd Adnan, Hamwira Yaacob and Normi Sham Awang Abu Bakar

PARALLEL SESSION 3
ISLAMIC APPLICATION FOR UMMAH DEVELOPMENT

TRACK: IAUD

Date: Saturday, 5th June 2021

Time: 3:30am – 5:00pm

Venue: Breakout Room 6

Moderator: Dr Mohd Izzuddin Mohd

Tamrin

ISLAMIC APPLICATION FOR UMMAH DEVELOPMENT

PID	PAPER TITLE	AUTHORS
6B	Document Tracking System	Anis Fatnin Mohd As'ri, Nur Izzati Mohamed Saharan and Zulkefli M Yusof
24B	An Approach of Classifying Waste Using Transfer Learning Method	Zian Md Afique Amin, Khan Nasik Sami and Raini Hasan
25B	Cues to Deception in Islamic-Websites Text and Design: The Interview with Experts	Fatima Ahmed Mohamed and Madihah Sheikh Abdul Aziz
32B	The Study of Social Media Contribution for Knowledge Sharing in Maqasid Al-Shariah	Siti Nur Syamimi Zailan and Mohamad Fauzan Noordin
33B	Key Role of Bug Triager in Triaging Decisions	Sohaib Altaf Raja, Madihah Sheikh Abdul Aziz and Asadullah Shah

PARALLEL SESSION 3
IS IMPLEMENTATION, GOVERNANCE AND CHALLENGES

TRACK: ISIGC

Date: Saturday, 5th June 2021
Time: 3:30am – 5:00pm
Venue: Breakout Room 7
Moderator: Dr Adamu Abubakar
Ibrahim

IS IMPLEMENTATION, GOVERNANCE AND CHALLENGES

PID	PAPER TITLE	AUTHORS
60A	Business Intelligence Implementation: A Case Study of Saudi Public Universities	Alyami Mona, Husnayati Hussin and Zainatul Shima Abdullah
9B	The State of Open Government Data Implementation in Malaysia Government Agencies	Noor Hazwani Mohamad Puad, Mohd Adam Suhaimi, Husnayati Hussin and Najhan Muhamad Ibrahim
12B	Cybersecurity Awareness Mobile Apps for Secondary School Students: LETSECURE	Azma Melia Jafri, Nur Ain Zulaikha Jamaluddin and Zahidah Zulkifli
20B	Cyber Generation: An Interactive Digital Storytelling on Digital Citizenship	Tuan Ahmad Bazli Tuan Abdullah, Mohd Faris Mohd Yussof and Nurul Nuha Abdul Molok
31B	A Review of Information System Models to Increase Reading Habit	Faizal Hazri Mat Ripin, Mohd. Zamri Osman, Awanis Romli and Wahidah Mohd Zain

PARALLEL SESSION 3
COMMERCIALIZATION AND ENTREPRENEURSHIP

TRACK: CE

Date: Saturday, 5th June 2021

Time: 3:30am – 5:00pm

Venue: Breakout Room 8

Moderator: Dr Murni Mahmud

COMMERCIALIZATION AND ENTREPRENEURSHIP

PID	PAPER TITLE	AUTHORS
17B	Business Model Shifts: Masjid Kitchens as Soup Kitchens, Jobs Employment and Nurturing of Asnaf as Entrepreneurs, and Income Generation for The Masjid	Abdul Rahman Ahmad Dahlan, Jamaludin Ibrahim, Rahmah Ahmad H. Osman, Suhaimin Mhd Sarif, Ghazali Jaafar, Saupi Man, Dzuljastri Abdul Razak, Noor Azian Mohd Ali, Noor Azizah Mohamad Ali, Nurhafizah Mahri, Normaziah Abdul Aziz, Amelia Ritahani Ismail, Andi Fitriah Abdul Kadir, Hafizah Mansor, Rizal Mohd Nor
29B	BabyCart : A Conceptual Business Model that Gives Benefits for Parents and B40 Community	Nurul Jannah Hussain, Siti Nur Aishah Sulaiman, Nur Ain Ishak, Nur Maisara Ahmad Rasid and Abdul Rahman Ahmad Dahlan
30B	E-Tailor Hub: A Conceptual Digital Platform Business Model to Enhance B40 Quality of Life via Sustainable Consumption Entrepreneurship	Nurul Najihah Binti Khairul Najmy, Siti Hajar Binti Borhanuddin, Nur Dhiya Alyani Binti Raduan, Siti Salbiah Binti Azmi and Abdul Rahman Ahmad Dahlan
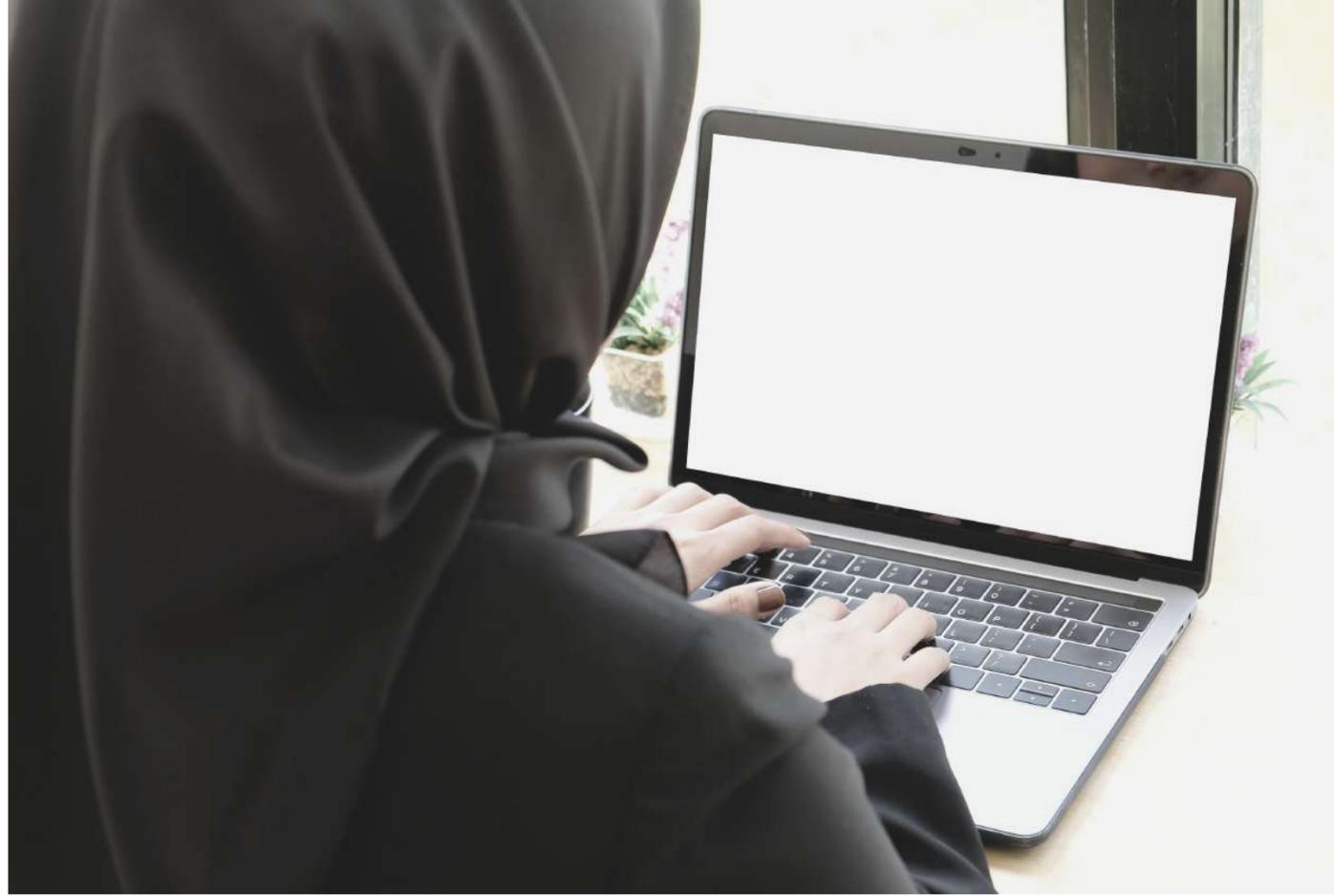
PARALLEL SESSION 4
COMPUTING TECHNOLOGIES AND APPLICATIONS

TRACK: CTA

Date: Sunday, 6th June 2021
Time: 11:30am – 12:30pm
Venue: Breakout Room 7
Moderator: Dr Ahmad Fatzilah
Misman

COMPUTING TECHNOLOGIES AND APPLICATIONS

PID	PAPER TITLE	AUTHORS
5B	Cybersecurity Threat through Heating Ventilation Air-Conditioning (HVAC)	Wan Mohamed Imran Hakimi Wan Mohd Sabri, Ahmad Adib Zakaria and Zulkefli M Yusof
22B	Secure Browsing Activities with Raspberry Pi	Muhammad Farhan Bin Azhar Azhar, Syahmi Kamarul Baharin and Norlia Yusof
26B	The Effect of Multiple Interpretations Emoji May Convey on the Intended Emotion	Adamu Abubakar Ibrahim, Ibrahim Dahiru Idriss, Jaafar Zubairu Maitama

Paper Abstract

Assessment of the Influence of ICT Facilities for Sustainability of Modern Teaching Excellence in Education

Ibrahim Dahiru Idriss, Jaafar Zubairu Maitama, Usman Haruna, Adamu Mamman Adamu, Abubakar Idriss Barde and Adamu Abubakar Ibrahim
University of Malaya
ibrahimdahiruidriss@gmail.com

Abstract

The advents of information and communication technology (ICT) have induced tremendous changes in the present education system. These interactive technological gadgets have affected the very nature of teaching and learning. Most teachers as well as students are not aware of the influence of ICT in the developing nations. Therefore the aim of this study is to determines the types of ICT facilities that could be affordable for the students and teachers, the extent of use of the ICT facilities among teachers of Secondary Schools (senior) in Potiskum Local Government, the influence of ICT facilities among students in secondary schools in Potiskum, the influence of ICT facilities among teachers in secondary school in Potiskum, as well as the problems affecting the use of ICT in teaching, learning and research in Potiskum. Findings of this study reveals that ICT gadgets are considered to be used in teaching and learning primary education but not affordable to teachers and students, students and teachers also do stay on computers but not for so long. ICT is also considered to have influenced teaching and learning in secondary schools. Therefore, it is concluded that, students and teachers in secondary schools use ICT instruments in the process of teaching and learning, although the tools are not very much affordable to them. The study has also revealed that students and teachers do stay on computers a little period of time due to lack of ICT facilities in their schools. We therefore concluded that ICT gadgets should be considered of paramount priorities in schools as it influences teaching and learning and school authorities should find ways to make ICT gadgets available for use to both students and teachers to facilitate academic activities and to influence learning at large

The Internet of Everything from Islamic Perspective

Ismail Faizi
International Islamic University Malaysia
qari.ismail.jan.111@gmail.com

Abstract

The IoE stand with four pillars which act as the home that bring together people, process, data, and things to make network connections more compatible and worthwhile than ever before and switching information into actions that generate new capabilities, richer experience, and remarkable economic freedom for business, individual, and states. However, even though the rise of IoE seems like a great achievement by humankind, but there are still exist some loopholes here and there in the system. For instance, in the aspect of security, and privacy, or data protection. In this context, the role of IoE in keeping and collecting one particular person data needs to be critically supervised, as it might be misused by some of the anonymous entity for the bad purpose. Thus, this paper aims to propose a couple of possible and relevant solutions to curb these challenges in the IoE and ensure that those solutions are parallel with what has been outlined by Islam through the Holy Quran, and the Noble Sunnah of the Prophet. The Internet of Everything (IoE) is an expanding new technology development that has become a vital part of the human being every day's life. It plays a momentum role in facilitating and improving people's lives in many aspects. Nowadays, the internet not only connect human with other human, but it also can enable everything to sense, process, collaborate, communicate the event and provide services which is well known as Internet of everything. This paper providing an overview of the implementation, challenges and solution of IoE. Next, the researchers deliver the characteristic of the IoE to enable the application and services. We also provide the value creation as combination of multiple product system in multilayer stack of IoE technologies. Hence, IoE or IoE provides connectivity from machine to machine anywhere at any time in order to communicate, exchange information and perform an action. The widespread use of IoE might arise various ethical and privacy issues. Finally, this paper highlighted into the challenges raised with the worldwide use of IoE and propose proper solutions by the Islamic Perspective.

Empirical Investigation on the Barriers of Adoption of Cryptocurrency-Based Transaction from an Islamic Perspective

Abulfathi Ibrahim Saleh Al-Hussaini
International Islamic University Malaysia
fathigalaxy@gmail.com

Abstract

This paper presents a user study of "perception of cryptocurrency-based transaction from the Islamic views". Bitcoin is considered as the special type of cryptocurrency used in this study. Users view bitcoin is as an app that provides a personal currency in digital wallet through which transaction can occur in order to either send, receive, buy, or sell the currency (bitcoins). Information System is an enabler of this mode of transaction, unfortunately, some user raised concern on the nature of transactions with Bitcoin. Specifically, some argued that Bitcoin can be easily used for illegal purposes and that the global public already uses Bitcoin mostly for illegal and Shari'ah non-compliant purposes under Islamic views. This study adopted "Technological Acceptance Model" and utilized quantitative research methodology, in order to formulate and test some hypothesis that will lead to an establishment of a model. Sample of 306 participants were used in the study. The result of the hypothesis testing indicates that "Behavioral Intention to Use Cryptocurrency from the Islamic perspective" is influenced directly by Shari'ah Compliance, Perceived Ease of Use, Emotionality, Perceived Usefulness, and Financial Concern. As evident from the analysis, Emotionality is influenced directly by Financial concern and Shari'ah Compliance. Whereas, Behavioral Intention is influenced indirectly by Financial Concern. The sample is general and does not specify a specific group of study. This study has contributed in understanding the Islamic issues behind the implementation of Cryptocurrency. The study formulates and test a theory for cryptocurrency-based transaction from an Islamic view.

A Framework for Adopting Blockchain Technology in Medical Health Records in Nigeria

Abulfathi Ibrahim Saleh Al-Hussaini
International Islamic University Malaysia
fathigalaxy@gmail.com

Abstract

Although Nigeria is one of the countries seeking to adopt modern technologies to solve its economic, health and other problems. However, Looking at the challenges, Nigeria still lack to adopt the Blockchain technology in healthcare providers to solve almost all of these issues. This may be due to the political issues of the state, and perhaps lack of infrastructure, awareness, education, cultural heritage Moreover, more important is the lack of effective model for adoption Blockchain technology in medical healthcare in Nigeria. Therefore, the attention of this study is to develop a framework to for adopting Blockchain technology in medical health data records in Nigeria.

EEG Features for Driver's Mental Fatigue Detection: A Review

Muhammad Afiq Ammar Kamaruzzaman, Marini Othman, Raini Hassan and Abdul Wahab Abdul Rahman
Universiti Malaysia Pahang
afiqammar91@gmail.com

Abstract

The purpose of this paper is to characterize mental fatigue through the understanding of human EEG features for safe driving behavior. Mental fatigue (MF) is defined and distinguished with physical fatigue. Neural activity of the human brain in mental fatigue is discussed and specific EEG features in relation to driving tasks are reviewed. In conclusion, the increase of parietal alpha power seems to characterize driver's mental fatigue in most of the studies. Future works may involve identification of other EEG features of higher importance for generalization across study conditions.

Constructing a Ubiquitous Learning Framework of E-Commerce Activities for Skill Development

Zainab Abu Bakar, Wan Fatimah Wan Ahmad and Nazlena Mohamad Ali
Al-Madinah International University, Malaysia
zainab.abubakar@mediu.edu.my

Abstract

A ubiquitous learning framework ensures its accessibility to access from anywhere, anytime, and anyplace. For the advancement of internet technology, the information gathering has been facile and has impacts on our everyday life. The literate people are more knowledgeable and skilled in the technical area. Besides literate people, the mass amount of communities not having proper technical knowledge such as e-commerce. E-commerce is the activity to buy and sell products through the internet via online services. The e-commerce used to sell and purchases items like book, stationary, household, apparel and, etc. The information shows on the web applications accessed by users who have the proper knowledge on it. The web applications are the way to gain technical knowledge as well and to transacts over the internet, where few of them can be accessed ubiquitously and instructs us of e-commerce technologies and activities. It is difficult to access and retain the knowledge for who are illiterate as well as not skilled. The research intends to construct a web framework for the communities to improve their livelihood by skilled up based on e-learning to e-commerce activities targeted to unskilled and semi-skilled. The contribution is the web framework; it contains instructions of e-commerce activities, the impacts on life, uses and how it improves livelihood. It elaborates through the text-based, image-based and video-based ubiquitous open-access learning for unskilled and semi-skilled communities in Malaysia.

Identifying Stress Level Among Gamers Using Electroencephalogram (EEG) Machine

Sheik Dawood Mohamed Rafi, Norzaliza Md Nor and Muhammad Arif Othman

International Islamic University Malaysia

sheikdawood1103@gmail.com

Abstract

This research is conducted to identify stress level among gamer using Electroencephalogram Machine (EEG). Electroencephalogram machine or better known as EEG machine is a machine used by neuroscientists to read brain signals activity through various number of channels. The brain signals collected from subjects using 19 channels EEG machine which is DABO Machine. The problem in this research study is to find out if game can induce stress. The expected outcome of this research is that brain signal collected from subjects could give enough evidence about the relationship between playing game and stress level in their daily activities. To design experimental procedure suitable for understanding the bio-signal of subjects inducing stress and to understand the relationship between four basic emotion (Happy, Calm, Fear, Sad) and the emotion while playing the games. In our research methodology, we focus on five difference stages to complete the research. The stages start with the data collection, pre-processing, features extraction classification and lastly analysis. Later, we able to come out with the result of our research about the stress level for the subject. The experiment was conducted by following a standard protocol experiment for EEG machine. This data will be analyzed using Mel Frequency Cepstral Coefficients (MFCC) as feature extraction, and multilayer perceptron (MLP) as classifier. The result show that the subject has positive emotion which is calm and happy at the beginning and ending of playing the game. At the beginning, subject only start with demo, so the subject did not feel pressured and at the end we assumed that the subject feel relieved because of ending the game. After certain time playing the game, the subject starting to have negative emotion until the end of the game. This happen because of subject started to feel stress after plays the higher level of the game. Based on the result, we can conclude that game can induce stress among gamers.

Analysis of Video Game Design Styles Based On Neuro-Affective Computational Model

Ayub Abdul Rahman, Hamwira Sakti Yaacob and Mohd Syarqawy Hamzah

International Islamic University Malaysia

ayub8779@gmail.com

Abstract

Current video games development tools no longer limits the designer's imagination to create. Design styles have become critical design decisions that serves as the platform to communicate with the player. While previous studies suggest a particular design style is for a particular audience, the method of using questionnaire and observation experiments do not provide a specific measurement of design style effects on the human mind. Furthermore, the sub- conscious effects of design towards learning potential are unknown. This research proposes to measure and correlate quantitatively between design styles in video games and the learning aptitude of the player. An approach to allow measurements of brain performance and emotional valence is conceived using interactive test instruments and Electroencephalogram (EEG). The brain performance test instrument profile the subjects while EEG records the brain activity. The benefit of this approach is that it provides the opportunity to apply machine learning algorithm for analysis. Volunteers participate by playing similar video games of two distinct design styles. Statistical classification methods derived from machine learning approaches such as the Multilayer Perceptron Neural Networks (MLP) for determining the accuracy of classification. EEG features obtained from the power spectral density (PSD) analysis shall serve as the input to the above-mentioned artificial neural network. Although data collection is still in progress, preliminary analysis has shown that a player with above-average memory performance is more calm and responds less to abstract design. On the other hand, a player with memory performance below-average is more agitated to abstract design. Further and deeper analysis taking into account other learning aptitude such as reasoning and verbal competency will follow.

Contribution of Information Technology (IT) in Conceptualizing the Qur`anic Approach on Programmed Systems of Biology

Ibrahim Shogar and Mohd Zulfaezal Che Azemin

International Islamic University Malaysia

shogar@iium.edu.my

Abstract

The analytical study on understanding the programmed systems of organisms is increasingly becoming necessary for its practical contribution in enhancing the environmental and human health. The holy Qur`an, in numerous passages, has addressed the design and harmony, in both the physical and biological worlds. The main objective of this Qur`anic approach is to shift human attention to study and understand the natural processes for temporal and religious purposes. Although laws of the physical world are well investigated and established, the natural processes governing the complex systems of biological world, however, are yet to be mastered. The major problem of this field is not only in complexity of the biological phenomena, but also in the relevant method for investigation. To achieve the Qur`anic objectives on study of the natural and human phenomena, however, we need to investigate both of the above problems. This paper aims to investigate method of conceptualizing the programmed systems of biology as introduced by the Holy Qur`an, and how information technology (IT) can contribute in achieving this important goal. The basic presupposition of the paper is that the new developments of information technology play a vital role in codification and understanding programmed systems of living creatures. Such codification is essential for predicting the future directions of the goal-guided processes of biology. The method adopted in the paper is theoretical and analytical in nature. The analytical method of systems biology, based on mathematical modelling and information technology, that aims at codification of the programed systems of biology will be adopted. The relevant Qur`anic verses on natural design and harmony, especially on the biological phenomena at both individual and collective levels, will be collected. Method of understanding such verses from both perspectives: (i) the classical views of Muslim scholars, and (ii) methods of modern evolutionary biology will be investigated. Finally, the paper investigates how modern information technology can contribute in codification of the programed systems of natural biology as embedded in Qur`anic verses. The paper presupposes that proper codification of programed systems of biology has three major implications: (i) explanation of biological phenomena; (ii) predicting the future directions of the goal-guided processes of biology; and (iii) Mastering the biological processes, by explanation and prediction, has great implication on environmental and human healthcare. Sufficient data on biological phenomena, mathematical analysis, and effective information technologies are essential to achieve these noble goals.

The Effects of Persuasive Technology on End-Users' Information Security Awareness

Mohammed Abdullah Bawazir, Murni Mahmud and Nurul Nuha Abdul Molok

International Islamic University Malaysia

bawazir333@gmail.com

Abstract

Currently in this digital age, information asset becomes increasingly critical where the measures to ensure the protection of information security are getting equally crucial. At the same time, end-users globally struggle to maintain their information resource secure. In fact, human factor constitutes serious vulnerability as the weakest link in a security domain. Although security education, training, and awareness programs are emerging as useful approach to improve information security awareness and intention to comply ISPs, changing end-users' security awareness and behaviours is still considered as the most difficult and challenging aspect of computer security. Therefore, the purpose of this research is to introduce a Persuasive Technology approach which is utilized to improve end-users' awareness and behaviour intention. In particular, Persuasive Technology has been found to be effective in changing the attitudes and behaviours significantly in many disciplines. In this context, this study developed an integrated model (persuasive security model) to investigate factors that can potentially improve security awareness and intention to comply ISPs. This research adopts mix methods, qualitative and quantitative approaches. The collection of data is based on secondary and primary data. Secondary data references were derived from publications, journals, and books to strengthen the primary information obtained. The primary data for this research was gathered by conducting experiment, the participants pass through pre-questionnaire, prototype development (persuasive application), post-questionnaire, and a short interview. The results indicate that the research model significantly predicts the key factors effecting security awareness using the Persuasive Technology approach. Persuasive Technology has positive effects to information security practices which increase end-users' motivation towards improving security awareness and intention of ISPs compliance. Adopting the Persuasive Technology approach has long-term impact by influencing end-users to use a short and concise persuasive application to improve the compliance of security practices. The value of this study is using Human-Computer Interaction (HCI) discipline to develop a new model based on Persuasive Technology and behavioural security theories to increase end user's security awareness as well as behaviour intention which will help end-users to improve the security practices compliance. The findings of this research will be valuable for academicians and practitioners for continuous developing of information security awareness and behaviour in the persuasive technology context.

Improving Requirements Quality by Boilerplates Conformance Checking

Siti Syara Aiman Seh Wali, Sarah Husna Haizad and Azlin Nordin

International Islamic University Malaysia

erasehwali@gmail.com

Abstract

In order to ensure requirements quality, a requirement is expected to meet several requirement quality criteria such as completeness and unambiguous. The quality of each requirement eventually will influence the quality of requirements specification. Inevitably, the importance of high quality of the requirements specification is required as the specification is used as a reference by stakeholders and developers throughout the software development process. Requirement engineers who are not properly trained may produce a set of poor-quality requirements. In the existing work, standard structures of requirements i.e. boilerplates had been introduced as an alternative to reduce this problem. Unfortunately, although the requirement engineers may have manually adopted the boilerplates structures, they might still have inconsistency issue. In this study, we attempt to facilitate the requirements quality improvement process by developing a Requirements Conformance Tool (RCT). The proposed tool is a semi-automated approach to assist the requirement engineers in identifying the problems of the requirements. The outcomes will be used to assist requirements engineers to re-construct the requirements. The implementation of the project is using JAVA as a medium for demonstrating the proof-of-concept of the proposed solution.

Implementation of Open Government Data in Asian Countries: A Review

Noor Hazwani Mohamad Puad, Mohd Adam Suhaimi and Husnayati Hussin

International Islamic University Malaysia

hazwanipuad@gmail.com

Abstract

Open Government Data (OGD) is data that has been collected and processed by public sector agencies or government agencies which can be accessed by anyone through the web portal. Many countries have implemented OGD to encourage economic growth and social development (e.g. the UK, Korea, Japan, Malaysia, Australia, Netherlands, etc.). This paper aims to study the implementation of OGD in selected Asian countries based on past researches. The findings indicate the benefits of OGD implementation, the factors of successful OGD implementation and the challenges in implementing OGD in those selected countries. The limitation of this study is the lack of past researches related to OGD implementation in Asian countries. Also, the study has limitations regarding the number of countries as the researchers only focused on the selected Asian countries

Exploring the Roles and Leadership Behavior of Chief Information Officers (CIOs): Case Studies of Two Public Universities in Malaysia.

Hussain Waheed and Husnayati Hussin
International Islamic University Malaysia
husine26@gmail.com

Abstract

Chief Information Officer (CIO) plays a very important role in an organization as CIO is the IT leader who ensures effective IT employment in organizations. The aim of this study was to explore the roles and leadership behaviors of the CIO in HEIs in Malaysia. This study, which employed semi-structured one-on-one interviews, was conducted with former and current CIOs of two public universities of Malaysia. The interviews were transcribed, and the interview data were analyzed thematically. The results indicated that the main role of CIOs is managing IT infrastructure, handling HEI's IT requirements, governance of IT in HEIs and strategic planning. It is also found that CIOs should have interpersonal skills, IT knowledge, managerial knowledge and skills and knowledge about HEIs' requirements. Furthermore, CIOs should exhibit Transformational and Transactional leadership behaviors to be effective IT leaders.

Neurofeedback training to improve the efficiency of wudu to promote psychological wellbeing: A conceptual study

Nurhafizah Mahri and Nurul Liyana Mohamad Zulkufli
International Islamic University Malaysia
nurhafizahm@iium.edu.my

Abstract

Neurofeedback (NF) is a brain training that uses electroencephalogram (EEG) signal as the input to provides immediate biofeedback to train the brain signal to shift into a tranquil state of mind. A few researchers reported that NF can be used to reduce stress level and increase the efficiency of meditation, or i.e. as a mental health therapy. Wudu and salah are scientifically proven to have significant impacts on reducing stress and promote calmness, which explained by the brain wave changing mechanism. Though the gold standard of brainwave (EEG) profile that can differentiate level of stress are still under research, the current finding reflects stress as in the higher state of beta wave, lower state of alpha wave, and high neuron activity in the prefrontal cortex in EEG signal. On the contrary, calmness is reflected as to be in the state of higher alpha wave, lower beta wave, and less neuron activity in the prefrontal cortex. Wudu and salah are compulsory rituals that must be performed at five specific times per day. Wudu if properly perform can promote an intense spiritual state, or mindful in salah and consequence effect of calmness. These rituals are believed to function as a natural method to calibrate the brain to the initial calm state before and after undergoing the hectic and busy daily activities. This study aims to conceptualize on how to develop a suitable neurofeedback training that can improve the impact of wudu to promote mindful of Allah in salah, and consequently to achieve psychological wellbeing among Muslim. To conduct this study, the training activities related to wudu will be recognized through EEG recordings, and the effect of the activities towards shifting the brain wave into a calm state will be investigated. Based on the recognized training activities, suitable NF will be developed and proposed.

Secure SMEs: Cyber Security End User Incidents Reporting System for SMEs

Nurul Nuha Abdul Molok, Narisha Aziz and Nurin Sharzana Sharudin
International Islamic University Malaysia
nurulnuha@iium.edu.my

Abstract

According to The Edge Markets Malaysia and Enterprise IT News Malaysia (2019), due to changing threat landscape in cyber security that happen nowadays in many organizations, 84% of Malaysian small and medium enterprises (SMEs) became the victims of cyber-attacks. Realizing the importance of cyber security preparedness, our paper proposed a web-based system named SECURE SMEs which is a Cyber Security End User Incidents Reporting System for SMEs in order to help the end user in an organization to report cyber security incidents found on their organizational information systems. After reporting, they will be notified with some useful tips on how to respond to cyber security incidents in SMEs. Interviews with IT experts have been done in order to gather requirements needed for our system. There are functionalities that can be adopted and adapted from the existing incident handling systems and also can add some new features as suggested by the interviewees. Other than reporting the incidents, this system will also create awareness among our users who used our system as there are updated news on cyber security incidents to provide security knowledge about the trends in the security threat landscape.

Business Intelligence Implementation: A Case Study of Saudi Public Universities

Alyami Mona, Husnayati Hussin and Zainatul Shima Abdullah
International Islamic University Malaysia
m102030m@hotmail.com

Abstract

Business Intelligence (BI) is a tool that combined systems and processes for extracting data from different sources of huge data-set in various formats, in order to present meaningful information through several platforms by multi-design dashboards. BI system assists senior managers in their decision-making process to achieve effective and efficient data utilization. Despite the advantages of the BI system, it is often applied with many risks as it is a complicated process. Therefore, the realization of these processes lies in the precise BI usage. Although not all 30 Saudi public universities have explored the practices of BI, Taif University (TU), Majmaah University (MU) and Prince Sattam Bin Abdulaziz University (PSAU) have applied it and explored its benefits, capabilities. In this sense, this paper sheds the light on the experience of the abovementioned selected Saudi public universities (SSPUs) on BI usage and presents qualitative findings. Interviews were conducted with 12 BI relevant entities in SSPUs to obtain their opinion regarding managing their data via BI and its implementation at the organizational level. These processes were carried out using the NVivo 12 Pro program, which was implemented to assist in analyzing the interview data. The findings show 4 main interview thematic mapping among SSPUs that are discussed briefly. Firstly, about BI system, which includes BI data sources, the responsibility of BI, obtaining licenses, BI launching and system type with the reason for its selection. Secondly, BI implementation, which includes facilities needed for BI usage, preparation for using BI, system accessibility, technical supports and user activation. Thirdly, obstacles faced using BI, which includes resistance for monopoly, resistance toward change, change duration, the solution to obstacles and implementation issues. Fourthly, consequences of using BI, which includes BI and academic accreditation, performance indicators and Saudi National Center for Academic Accreditation and Evaluation (NCAAE)'s testimonial.

Using UTAUT Model to Determine Factors Affecting IoT Usage in Private Universities in Saudi Arabia

Eman Almetere, Nur Naha Abu Mansor and Beni Widarman Yus Kelana
Universiti Teknologi Malaysia
emo-22@windowslive.com

Abstract
The Internet of Things (IoT) is a network of interconnected and uniquely identifiable objects which will lead to dramatic changes in our lives. Due to the lack of internet of things usage behaviour in Saudi Arabia universities, understanding students' usage behaviour and their intention is very important. However, there are very few studies that investigate the factors that impact students' acceptance and usage toward IoT technologies. The purpose of this study is to investigate the influenced factors and their relationship to the adoption and actual usage of IoT technologies in education domain among students in Saudi private universities. The first objective of this study is to determine the significant effect between the influencing factors and the IoT usage behaviour. The second objective is to examine the significant effect between the influencing factors and behavioural intention. The third objective is to identify the significant effect between behavioural intention and the IoT usage behaviour. The fourth objective is to examine the mediating role of behavioural intention on the relationship between the influenced factors and IoT usage behaviour. The last objective is to determine which is the most dominant of the influencing factors that contributes to the IoT technology usage behaviour. In this research, survey questionnaires will be used. Partial Least Squares Structural Equation Modelling (PLS-SEM) conducted by SmartPLS will be used to analyse the data from students in private universities in the middle region. This study will be a guideline for private universities and the ministry of higher education in Saudi Arabia to improve IoT usage in education.

Respecting Patient Privacy With Federated Artificial Intelligence

Mohd Adli Md Ali, Edre Mohammad Aidid and Hafidzul Abdullah
International Islamic University Malaysia
qunox@iium.edu.my

Abstract
Multiple research has shown that artificial neural networks (ANN) can assist physicians in diagnosing a patient with greater accuracy and sensitivity. ANN applications are not limited to just the classification of diseases but also include image segmentation, tumor localization, and mortality rate predictions. Nonetheless, the great march of success by ANN is only possible by the availability of an open medical dataset. Only with such open datasets can developers build, train and test ANN models to obtain higher accuracy. However, there is yet an open medical dataset in Malaysia that can be used to validate ANN performance on local patients. This may be due to the local medical institution's hesitance to release any medical images and records to respect the patient's privacy. One way around this is to adopt the Ensemble or Federated Learning system. In federated learning, medical institutes share their locally trained ANN model's weight and bias to create a single federated level ANN model. While in ensemble learning, multiple ANN models are used to vote on the most probable class for each data. In both systems, no sharing of patient's data is required. In our experiment, we tested the capability of 25 ANN models to classify chest radiograph images into three classes; normal, bacterial pneumonia, and viral pneumonia. Each ANN model is given a training dataset that is random in size and class ratio. The result obtained from the experiment shows that the federated system obtains the highest score in all measured metrics. It obtains a score of 0.76, 0.72, and 0.72 for average weighted precision, weight sensitivity, and F1, respectively. It also has the lowest standard deviation in all performance metrics compared to other learning systems. The result obtained here further strengthens the notion that if Malaysia wants to adopt a national-level artificial intelligent system for medical purposes, it should utilize the federated learning system at its core. It ensures Malaysia has an artificial intelligence system that respects patient's privacy while maintains its robustness.

Revitalising Dinar and Dirham: Monetary Analysis of the advancements of Cryptocurrency in Islamic Financial System

Afdzaal Jehabar Sadiq and Mohamed Aslam Akbar
International Islamic University Malaysia
afdzaaljehabarsadiq@gmail.com

Abstract
The increasing number of devices using Android operating system in the market makes these devices become the number one target for malicious software. Attackers aim to eavesdrop at Android devices to get the most benefits from value-information that users stored in. Android operating system and related malicious software continuously developing. Therefore, Traditional methods such as antiviruses are ineffective in detecting unknown and zero-day Android malware. Machine learning has been used in many research as an alternative method to detect Android malware because of machine learning ability to learn from the existing information, and then use them to detect malicious software. In this paper, a rich background on Android system, Android Malware, and machine learning is presented. The most popular and recently published papers on Android malware based-on machine learning are reviewed. Important points of malware detection using machine learning are discussed. Finally, the conclusion of this work is provided.

Cybersecurity Threat through Heating Ventilation Air-Conditioning (HVAC)

Wan Mohamed Imran Hakimi Wan Mohd Sabri, Ahmad Adib Zakaria and Zulkefli M Yusof
International Islamic University Malaysia
eemranhakimi@gmail.com

Abstract
This paper highlights the issues specifically about HVAC, despite it being the lesser popular source of attacks that need to be studied so that the necessary precautions can be made to protect the systems. A review of the issues concerning health care buildings is also highlighted to give a better understanding of the vulnerability issues of HVAC systems. According to security firms, HVAC systems are mostly connected to various important buildings such as corporate companies, government buildings and even hospitals. Few companies usually grant access to their HVAC to their vendors to maintain. But few have measures to ensure their access is authenticated and secured. Based on the study, by having access to the HVAC system can lead to damage. The access can be used for the vendors to alternate the temperature of the HVAC after implanting a malware inside the targeted host. This will lead to significant damage when the attacker manages to send a complete command to acquire their goals.

Document Tracking System

Anis Fatnin Mohd As'ri, Nur Izzati Mohamed Saharan and Zulkefli M Yusof
International Islamic University Malaysia
anissfatnin@gmail.com

Abstract

With rapidly-changing technology and increasing emphasis in managing documents properly, the Document Tracking System (DTS) has been developed as a solution system to improve the efficiency of retrieving the document online at any time and tracking the movement of documents in and out of Office of Knowledge for Change and Advancement (KCA) in International Islamic University Malaysia (IIUM). KCA have tried to improve document handling and use through the application of information technology. DTS is the project that involves a system that assists users in tracking and seeing reports of their documents through a website. DTS is a web application that is able to track the movement of documents from desk to desk. Besides, DTS also can produce reports of documents submitted in the KCA office. The details of the documents, such as, add the details of the documents, reports, actions, notifications and announcements can be processed and tracked by the system. Furthermore, the system helps in online tracking and provides the details of documents' location. DTS uses Xampp and Visual Studio Code as the development platform with PHP Language for user interfaces while PHPMyAdmin as a database platform for the system. DTS is interactive and usable and able to improve documents management and productivity in KCA Office.

Prediction of Agricultural
Emissions in Malaysia Using the ARIMA, LSTM, and Regression Models

Maliha Homaira and Raini Hassan
International Islamic University Malaysia
maliha.homaira65@gmail.com

Abstract

Agriculture has always been an important economical factor for any country which is causing emissions every day without realizing how much it is leading towards increasing number of Greenhouse Gas (GHG). Agricultural emissions has been forecasted for Malaysia to have a better understanding and to take measures right away. This can be done through a machine learning model including collecting data, pre-processing, training, building a model and testing the model for accuracy. This project aims to develop a model to forecast agricultural emissions using three most accurate forecasting models. The time series analysis consists of two models, auto regressive integrated moving average(ARIMA) and long short-term memory(LSTM) and simple linear regression model. These models illustrate the forecasted upward trend values until 2040 in Malaysia. The ARIMA model provides good prediction curves which is close to the actual values taken since 1960 and the LSTM model provides a decreasing curve for every value loss epochs which concludes to be good model for forecasting. It was concluded that, agricultural emissions is causing soaring of temperature in Malaysia and immense amount of emissions causing from agriculture. The techniques used in this paper can be enhanced more in the future and the visualizations can help the Malaysian agricultural sectors to take proper measurements to prevent this uprising agricultural emissions..

The Impact of Covid-19 on Adolescent Entrepreneurial Interest: A Case Study at UTHM Johor Malaysia

Faisal Bin Husen Ismail
Universiti Tun Hussein Onn Malaysia
faisalhu@uthm.edu.my

Abstract

Covid-19 outbreaks result in effects and changes in normal human life. Everyone feels the effects of Covid-19, including teenagers. This study aimed to determine the effect of Covid-19 on entrepreneurial interest among adolescents. We conducted this study on students who are studying at Universiti Tun Hussein Onn Malaysia Pagoh branch. The object of the study was a student with an interest in entrepreneurship at the time of the Covid-19 pandemic. We will randomly select the study sample among UTHM Pagoh branch students. We will analyze the data for this study using SPSS software. In addition, this study to identify the differences in the influence of exogenous variables on the endogenous variables of the study based on location (urban and rural students) on the factors that influence the demand for entrepreneurship among adolescents. This qualitative study uses a survey method involving 250 students from urban and rural areas. This study refers to the Self -Learning Ability Model (Borkowski & Dukewich, 1996) as the basic model of the framework of this study. Therefore, this study is expected to provide useful input for the improvement of students' competencies after they graduate and achieve the goals of the national education philosophy to produce good - looking Malaysian citizens.

The State of Open Government Data Implementation in Malaysia Government Agencies

Noor Hazwani Mohamad Puad, Mohd Adam Suhaimi, Husnayati Hussin and Najhan Muhamad Ibrahim
International Islamic University Malaysia
hazwanipuad@gmail.com

Abstract

Agriculture has always been an important economical factor for any country which is causing emissions every day without realizing how much it is leading towards increasing number of Greenhouse Gas (GHG). Agricultural emissions has been forecasted for Malaysia to have a better understanding and to take measures right away. This can be done through a machine learning model including collecting data, pre-processing, training, building a model and testing the model for accuracy. This project aims to develop a model to forecast agricultural emissions using three most accurate forecasting models. The time series analysis consists of two models, auto regressive integrated moving average(ARIMA) and long short-term memory(LSTM) and simple linear regression model. These models illustrate the forecasted upward trend values until 2040 in Malaysia. The ARIMA model provides good prediction curves which is close to the actual values taken since 1960 and the LSTM model provides a decreasing curve for every value loss epochs which concludes to be good model for forecasting. It was concluded that, agricultural emissions is causing soaring of temperature in Malaysia and immense amount of emissions causing from agriculture. The techniques used in this paper can be enhanced more in the future and the visualizations can help the Malaysian agricultural sectors to take proper measurements to prevent this uprising agricultural emissions..

Cybersecurity Awareness Mobile Apps for Secondary School Students: Letsecure

Azma Melia Jafri, Nur Ain Zulaikha Jamaluddin and Zahidah Zulkifli

Universiti Tun Hussein Onn Malaysia

azmaajafri@gmail.com

Abstract

Cybersecurity is one of the important things that people need to know and be aware of these days because the use of the internet increases rapidly. The most worrying part is when the pandemic Covid-19 outbreak occurred, more people spent their time working from home using the internet and filling their time by browsing the internet. More concern is for the people who did not have any idea how bad and dangerous cybersecurity threats could happen to them, especially secondary school students. The objective of this paper is to study the current problem and awareness on cybersecurity of secondary school students that focuses on form 4 and 5 students in Malaysia. As part of the results, LetSecure is developed, which is a mobile application that can help to spread awareness about cybersecurity and cybersecurity as a career. In order to develop this system, surveys and interviews have been conducted. The data for surveys that have been collected are from secondary school students and interviews with counselors of SMK Sungai Pusu. The methodology that is being used for this application is System Development Life Cycle (SDLC) and the Object Oriented. LetSecure is developed focusing on the beginners level, which are secondary students and also for people who do not have any basics on cybersecurity or advanced technology. As a conclusion, this application will give a lot of benefit for secondary school students in terms of increasing their awareness on cybersecurity and to choose cybersecurity as a career for their future.

E-Bazaar: Farmers & Consumers E-Commerce System

Mohammad Tahmid Lodi, Mujib Mehran and Zahidah Zulkifli

International Islamic University Malaysia

tahmidlodi3@gmail.com

Abstract

Bangladesh encounters a loss of tonnes of fruits and vegetables in every season due to a lack of post-harvest facilities and a lack of storage system. According to a report conducted by Bangladesh Agricultural University, approximately 32.24 billion Taka (approximately 1.6 billion Malaysian Ringgit) worth of fruits and vegetables was wasted every year. According to another report, highly perishable fruits and vegetables can lose up to 40% of their value in a single season. Objectives: This paper aims to demonstrate how the E-bazaar application can contribute to reducing the wastage of fruits and vegetables. The purpose of E-Bazaar is to create a Horizontal Market for the farmers and the agri-business owners. It will give farmers and sellers a versatile market to sell their harvest or products which can be fruits, vegetables, organic products, groceries, dairy products, meat, fish and all sorts of food items to meet the needs of a wide range of customers. Methods: System Development Life Cycle (SDLC) has been implemented in order to develop this system. For data collection, people related to this agriculture have been interviewed to give their feedback on this application which includes a farmer, an agri-businessmen and an existing online business that sells grocery and uncooked food items through Facebook page and their website. Significance: According to our research and the response from the interviewees we can claim that E-Bazaar can create a new platform for sellers. Farmers can sell their products in bulk and in small quantities. New businesses can be created since people will not require a shop to sell their products. It will create job opportunities and more business opportunities for people in Bangladesh and it can be applied to any other country. The success of this application can play a vital role to revive the economy.

Behavior Analysis of Mental Stress Before and After Listening to Quranic Recitation Based on EEG Signals

Hana Silabdi, Raini Binti Hassan, Nurhafizah Binti Mahri and Norzaliza Binti Md NorBrain
International Islamic University Malaysia
silabdi.hana@live.iium.edu.my

Abstract
Stress is a chronic problem of the modern world. According to the World Health Organization (WHO), stress is one of the most serious health problems of recent decades and is considered the main threat to individuals, occurring when they lose the balance between the difficulties of daily life and their ability to manage them. It has been shown by numerous studies that Quranic recitation is effective in calming the mind by generating Alpha activities on the human brain that indicate a state of relaxation and calmness. However, Quranic recitation and its effect on mental stress itself are still not fully investigated and understood. This research is therefore being conducted to explore the brain behaviour of stressed individuals after listening to Quranic recitation. As a preliminary study, the biosignal of three participants (subjects) was collected using electroencephalogram (EEG), and followed by our experimental procedures which involved: 1) filling out the DASS -21 (depression anxiety and stress scales), and 2) based on the DASS 21 scores, EEG data were collected from the subjects before and after listening to the Quranic recitation, and if the subject is stressed, or if the subject is not stressed, only the EEG data in the normal state was collected. Topographical maps of the five power bands of EEG for each subject were then created and visualized using Python, and a comparison of these maps was drawn to derive the research results. The result showed that after listening to Quranic recitations, the high Beta power than Alpha that was induced by stress was reduced to be high Alpha power than Beta power, and this indicates the normal state of the subject's brain activities without stress..

Virtual Tourism in Sudan

Samir Adil Babiker, Omer Faez Salem Ba Jamel and Zahidah Zulkifli
International Islamic University Malaysia
samir0117776362@gmail.com

Abstract
The Internet is changing the tourism business structure for both providers and consumers. Therefore, Tourism websites have become one of the primary sources by online consumers especially international tourists in holiday arrangements, selecting the destination, and trip planning that caters to their needs. Tourism promotional efforts include various tools such as websites, brochures, magazines, and guidebooks. However, most tourists today prefer utilizing online mediums to get information about a particular tourist destination. The country of Sudan has great natural endowments quite attractive to behold, making it a joy to travel in, yet one of the least visited countries in Africa. This paper aims to study the current tourism promotional practise in Sudan and to develop a website that can help potential tourists to plan their itinerary while looking at the beautiful places virtually. The System development Life Cycle (SDLC) has been chosen as the methodology for this system development. Data collection was conducted using questionnaire methods and being distributed to the public in Sudan. This website can contribute to economic gain, generate jobs in an economic sense direct or indirect, higher foreign currency sales, and increase revenue for business operators. In addition, it will play a main role in environmental education and improvements as well as it will affect the lives of people who live in tourist destinations by increasing our awareness and understanding of different cultures and providing community facilities, as well as tourist facilities.

Sensei No Kuruma : Car Advising System with Digital Forensic Evidence

Hafizah Mansor, Nur Shahirah Hafizah Mohd Shani and Arina Pradu

International Islamic University Malaysia

hafizahmansor@iium.edu.my

Abstract

Drivers need to be well-aware of the conditions of their cars. Most drivers, especially women, are not well-versed in automotive systems and functionalities. On the other hand, there are now many available mobile applications to assist drivers in terms of navigation as well as car maintenance. However, most of these applications on car maintenance provide very technical information that are not user-friendly for laymen. Our newly developed application aims to solve this problem by providing the list of trouble codes, with their respective descriptions, and suggestions to fix the problems. Hence, it is called Sensei No Kuruma ("Car Teacher" - in Japanese word) to give advice to the drivers regarding their cars. The application will connect to the On-Board Diagnostic (OBD) port of the car using ELM327 via Bluetooth. Additionally, the application also records all the diagnostic sessions for further assessments, and has an extra feature for parents to be alert on the presence of their children in the car. These features are possible through real-time extraction of digital forensic evidence.

Business Model Shifts: Masjid Kitchens as Soup Kitchens, Jobs Employment and Nurturing of Asnaf as Entrepreneurs, and Income Generation for the Masjid

Abdul Rahman Ahmad Dahlan, Jamaludin Ibrahim, Rahmah Ahmad H. Osman, Suhaimin Mhd Sarif, Ghazali Jaafar, Saupi Man, Dzuljastri Abdul Razak, Noor Azian Mohd Ali, Noor Azizah Mohamad Ali, Nurhafizah Mahri, Normaziah Abdul Aziz, Amelia Ritahani Ismail, Andi Fitriah Abdul Kadir, Hafizah Mansor, Rizal Mohd Nor

International Islamic University Malaysia

arad@iium.edu.my

Abstract

The UNICEF report titled "Families on The Edge" dated October 2020, stated that COVID-19 crisis has pushed more low-income (or B40) urban Malaysian families into poverty. The poverty rate of the B40 community in 2020 is higher than last year, with 50% of the families now living in absolute poverty. 70% of these households reported that COVID-19 had affected their ability to meet their basic living expenses. 37% reporting that they struggle to purchase enough food for their families, while 35% are unable to pay their bills on time. Hence, the key objectives of this paper is to offer a conceptual business model in transforming current masjid kitchen (or mKitchen) as a potential in (a) providing soup kitchen for the B40 and Asnaf group, (b) providing job employment while nurturing and reskilling the Asnaf as future F&B related entrepreneurs, and (c) generating income for the masjid via rental of existing kitchen facilities. This is to turn the Asnaf community 'Dari Penerima Zakat ke Pembayar Zakat' or from Zakat receivers to Zakat contributors. The conceptual mKitchen business model can be adopted or adapted for possible implementation, in general, by masjid or mosques.

RFID Application in Courier Services

Maznah Ahmad, Mohamad Akmal Abdul Karim and Muhammad Hafiz Aizuddin Zaidi
International Islamic University Malaysia
amaznah@iium.edu.my

Abstract

This research paper highlights the efficiency of Radio Frequency Identification (RFID) technology compared to the existing system, barcodes in the courier services industry. We analyse the RFID impact on inventory accuracy by analysis on error and time taken to read the tags that will apply in the courier warehouse and distribution centre system. These technologies make many companies unsure which technology offers them the best return in this industry. In this study, we examine that RFID will improve the quality of inventory management systems by reducing the time consumed and increasing the number of product accuracy. The research is based on thorough paper and documentation review of the technology related to RFID and barcodes technology.

Secure Expense Manager: A Mobile Application for Managing Expenses

Muhammad Faris Ahmad Sabri, Muhammad Luqmanulhakim Sa'Ari and Nurul Nuha Abdul Molok
International Islamic University Malaysia
faris.varsity@gmail.com

Abstract

It has been reported in academic studies and government reports that bankruptcy cases are on the rise among fresh graduates in Malaysia and other countries. The influencing factors of this phenomenon are due to young adults' shopping behavior and lack of knowledge on financial planning. The behavior of purchasing things that they want rather than things that they need result to serious debt issues among them. Therefore, our project proposes a mobile application that can help fresh graduates to manage their expenses and guide them to spend wisely by following the 50/30/20 rule which is 50% on needs, 30% on wants and 20% on savings. Our proposed Secure Expense Manager mobile application can assist in fresh graduate's daily lives in the aspect of money management in which it is capable of keeping track of the users' expenses securely. This will make the process of organizing the finance less complicated as well as reviewing purchase records for users to use as reference in the future. The development methodology of this mobile app is based on Secure System Development Life Cycle (SecSDLC). Prior to the development process, a survey was done and feedback from 35 fresh graduates with less than 2 years working experience was collected to understand the user requirements and awareness on financial management.

MolokCyber Generation: An Interactive Digital Storytelling on Digital Citizenship

Tuan Ahmad Bazli Tuan Abdullah, Mohd Faris Mohd Yussof and Nurul Nuha Abdul Molok
International Islamic University Malaysia
tuanahmadbazzli1998@gmail.com

Abstract

In this interconnected cyber world, the use of the Internet among children are on the rise so as the exposure to cyber threats such as cyberbullying, online games addiction and sexual grooming. In order to address these threats, this paper focuses on inculcating children's awareness on digital citizenship which promotes responsible and ethical use of digital technologies. It proposes an interactive digital storytelling application targeted to children aged 7 to 12 years old with educational audio and video animation contents that can help children to be mindful of the dos and donts in the cyber world. This digital storytelling would encourage children on how to behave properly while they are online, making the right actions when they encounter cyber threats and understanding cybersafety and cybersecurity risks. These lessons would ensure the children become more familiar with the digital environment and they would be able to make rational decisions while obeying the Islamic teachings even when they are online. The main aim of this project is to protect children from harming their mental and physical self when using digital technologies.

Themes and Topics in Information Dissemination Models adopted by Muslim Scholars on Cryptocurrencies

Roslina Othman, Mohamad Fauzan Noordin, Nadzrah Ahmad, Salina Kassim and Muhamad Aizat Nazmi Mohd Nor Hamin
International Islamic University Malaysia
roslina@iium.edu.my

Abstract

A cryptocurrency is a disruptive technology invention that has called for national level regulations and religious intervention. This technology of cryptocurrencies acts as a virus that goes viral. User adoption of various cryptocurrencies has really taken of, with millions of wallets. The information flow on cryptocurrencies takes the form of an epidemic transmission. Thus, users are "infected" or at least "susceptible" to this "virus" infection. The issues related to cryptocurrencies are that any money must exist in physical form backed by an asset and incurred no oppression in the transaction. There must be no delay, i.e., must be simultaneous, in giving and taking. Unfortunately, the virtual environment, such as cryptocurrencies, does not have this condition in its ecosystem. The decision about cryptocurrencies has Shari'ah-related issues. Scholars offer multiple views on matters related to the concepts and implementation of cryptocurrencies. Thus, this research examined themes and topics information dissemination models adopted by Muslim scholars in relation to cryptocurrencies issues and facts. The project surveyed literature related to information dissemination model, epidemic model, Muslim scholars' way of issuing fatwa and spreading the meaning and interpretation of the decision and adoption, issues and questions posted on cryptocurrencies, and ways technologists used to promote bitcoins, among others. In surveying the 200 research articles, several known factors were identified and that the SEIR model needs to be improved and modified according to the trend and emerging issues with forecasts up to 2030. It is expected that the emerging issues on cryptocurrencies could decline or move upward after experiencing slow growth. The emerging issues were related to enquiries on its halal or haram that are highly dependent upon what the technology could offer. As of the SLR done at this point, the reviews on emerging issues were briefly mapped onto the current models of information dissemination. As such one of these models was selected for the survey. The project applied thematic approach to identify the concepts, themes, and taxonomy on social media interactions between the scholars and the followers-public. Interactions came in the form of videos, television broadcasting, audios including radios and texts with comments and questions. TV and radio recordings were posted in the social media. Themes and concepts included new opinions, extended solutions, technologies - benefits and risks, measurements and corrective actions, and non-committal items among others of wide ranges. Themes and concepts were extracted from the web and analysed through sentiment analysis in WordStat 7, QDA Miner and Lightside. Sentiments were found to be non-stop at a level and appeared at each node. Nodes were filled with the designed taxonomy, covering Muslim scholars, researchers, technologists, followers, public, commercial adopters, and users. At this stage, commercial adopters were looking more at the blockchain technology for more security and trust levels in online transactions, while users are more of differentiating the trusted sellers and scammers. Sentiments were shared based on experiences of individual, which turned out to be common among the users. These issues have been the major concerns among the Muslim scholars, researchers, and technologists, and thus, an epidemic model as an information dissemination model is a solution. Scholars and their topic-based followers helped to shape the understanding what is fake and what is true from a perspective. Scholars and their private circles reviewed the nature and what cryptocurrencies are promoting, to respond to those issues, with accuracy. The taxonomy was developed based on cryptocurrencies terms and vocabulary. In addition, the taxonomy for the Islamic rulings was developed based on maqasid al-shariah - maal. Currently, these concepts and themes are pre-validated. Sentiments extracted were: gambling, uncertainties, risks, questionable, rigidity, absence of fatwa, fraud, scam, data security, and cybercrimes. The conclusion is that the information model proposed fits into the current trend of ways that Muslim scholars are adopting. The nodes begun with the ignorant who lacked the knowledge and understanding of cryptocurrencies and were cautious to subscribe to cryptocurrencies with the perception that it could be coming from scammers, beyond the lawful and forbidden.

Secure Browsing Activities with Raspberry Pi

Muhammad Farhan Bin Azhar Azhar, Syahmi Kamarul Baharin and Norlia Yusof

International Islamic University Malaysia

muhd016farhan@gmail.com

Abstract

Internet have been a staple in our society. The global Internet users spend more than 6.5 hours per day surfing the Internet. Therefore, modern website tends to monetize this chance where they include certain spaces on their website that aim advertisers to put their online advertisements on it. Ad-blockers emerge as a tool that blocks any advertisements to improve users experience when browsing the Internet. The objective of this project is to develop a network ad-blocker using the Raspberry Pi device that is capable of blocking ads. The device, manage to block the unwanted domains based on the blacklist. Hence, it eases the user experience when using the Internet, protect the user security and faster the Internet's speed.

Blockchain-based Zakat Collection to Overcome the Trust Issues of Zakat Payers

Muhammad Nur Aqmal Khatiman, Muhammad Salikin Ismail and Norzariyah Yahya

International Islamic University Malaysia

aqmalkhatiman@gmail.com

Abstract

Zakat is one of the five pillars in Islamic principles, subject to all qualified Muslims which requires them to contribute a proportion of one of their income or the wealth possession for the welfare of the Muslim community. In Malaysia, lembaga zakat is the organization appointed by each state government to manage the zakat transactions. The zakat transactions can be done either through online transactions or over the counter. However, there are issues related to zakat management such as the zakat payers are not satisfied with the zakat distribution, and there are claims for lack of transparency in the zakat management which lead to trust issues among zakat payers to contribute their zakat through lembaga zakat. One way to respond to the issues is by having transparency in the zakat transaction also applying a trust model such as blockchain in zakat management. Thus, this project aims to use blockchain technology and its main component, smart contract, as the base of the zakat collection and utilize Ethereum as the platform.

An Approach of Classifying Waste Using Transfer Learning Method

Zian Md Afique Amin, Khan Nasik Sami and Raini Hasan
International Islamic University Malaysia
afiquezian@gmail.com

Abstract

One of the most critical issues facing by the world is waste management, regardless of whether the region is being established or in the process of becoming established. There is a waste partitioning process in waste management, and the main challenge is that the garbage space is flooded long before the beginning of the following cleaning process at clear spots. Only unskilled workers conduct waste separation, which is less accurate, time-consuming, and not utterly possible due to the enormous amount of waste. Using the Convolutional Neural Network, we are proposing an artificial waste classification problem to compile and organize a dataset into seven categories consisting of metal, plastic, glass, paper, cardboard, trash, and E-waste. We then distinguished between specific transfer learning algorithms for our project: Xception, DenseNet121, Resnet-50, MobilenetV2, and EffiecienNetB7. DenseNet121 achieved a high precision characterization of about 93.3% for our model, while Mobilenet also demonstrated an incredible conversion to different forms of waste of 93% and Resnet-50, Xception and EfffiecienNetB7 achieved 92%, 92.5%, and 87%, respectively. In the future, we would like to increase the accuracy by using some other hyperparameter tuning, and we would like to deploy the project in mobile devices. We will use dockers or Kubernetes for the deployment, and YOLO real-time object detection as a framework for the post works.

Cues to Deception in Islamic-Websites Text and Design: The Interview with Experts

Fatima Ahmed Mohamed and Madihah Sheikh Abdul Aziz
International Islamic University Malaysia
eng.talal2ali@gmail.com

Abstract

Deception is viewed as manipulation of the truth either by hiding truthful information or showing false information. This study focuses to investigate cues to deception in the Islamic Websites text and design from the point of view of an expert. This study uses interviews with experts to get in-depth from the cues to deception in text and design. To this end, there were six experts involving three from the Islamic background, while the other three from Human computer Interaction (HCI) background. The questions used for the interview were developed from Systematic Literature Review (SLR). This research uses thematic analysis as a method to analyses the transcript data. This paper presented nine heuristics (themes) generated from the transcript data, four heuristics were from textual content and 5 heuristics from the design, each of these heuristics have subcategories which are the cues to deception. The finding shows that there were many cues to deception on the website that claimed to be Islamic, and the most deceiving content found on the Internet were from the websites that discusses Prophet Muhammad PBUH biography

The Effect of Multiple Interpretations Emoji May Convey on the Intended Emotion

Adamu Abubakar Ibrahim, Ibrahim Dahiru Idriss, Jaafar Zubairu Maitama
International Islamic University Malaysia
adamu@iium.edu.my

Abstract

There are some questions that are still unanswered about how certain emojis can be used to send the intended message accurately, such as the effect of intentions, perceptions and feelings. The positive effect of positive oral messages is increased by emotions, (like shouting or speaking slowly) but emojis may send positive messages which contradict the outcome of certain intended ideas about the message. Therefore, this study investigates whether positive emoji increase positive positivity or sarcasm in a relationship between the use of direct mood-specific emojis and indirect mood-specific emojis. Experimental analysis with emogis from 3 mobile messaging applications was conducted with 30 participants. The frequency for humour of emojis within the categories of, "feeling upset with jokes emogis", "having fun and entertained with fun emojis", and "feeling happy with happy emogis" are evaluated. The frequency for the use of emoji has been found to be associated with joking. They indicate that most emojis use and are suitable for expressing emotional sensations, but they do not create a time limit to which the emotions get associated with the sign. In addition, Emoji's fail to express the impact on neutral and negative messages to a large degree.

Role-Based Blockchain-inspired Concept for Managing and Monitoring Tasks Associated with Incentives

Adamu Abubakar Ibrahim
International Islamic University Malaysia
adamu@iium.edu.my

Abstract

Role-based is the role of an individual in the form of either "Role-Playing" or "Role-Taking" or both. There is a lack of a robust system for tracking the activities involved in a role associated with rewards. Even though there are monitoring and managing systems build on the economic systems, these are not flexible and lack scalability in monitoring and managing lifetime records. This paper conceptualized Role-Based blockchain-inspired for managing and monitoring tasks associated with incentives. The concept provides an allocation mechanism based on Blockchain for individual recognition, oversight, and participation. Subjective assessment and experimental analysis were used to obtain sufficient information to explain the requirements of conceptual components of a role-based under "roles-playing and role-taking" with the degree of rewards for each role. This concept is proven to have a new mutual way of assistance for the Role-takers and role-players.

A Systematic Literature Review on Emotional Text for Malay Corpus

Hafizuddin Muhd Adnan, Hamwira Yaacob and Normi Sham Awang Abu Bakar
International Islamic University Malaysia
hafiezadnan@gmail.com

Abstract

The existence of corpus, especially online corpus, fabricates benefits not only to the linguistic area, but also benefits to others, for instance to academicians especially researchers. Research trends on corpus shows that study is done to upgrade the performance and functionality, for example toward the emotional corpus. These emotional corpus been used widely not only by researcher in linguistic but also by psychologist, the legal firm and also by stakeholder by referring to the emotional annotation in the corpus to understand about their client emotion and behaviour. However, the study on the Malay emotional corpus is still left behind where currently there is no available study or paper been published regarding on Malay emotional corpus and also no development method yet been study on Malay Emotional Corpus. Therefore, this paper aims to focus on applying the systematic literature review (SLR) regarding the emotional corpus. The objective of this study is to understand and identify the available technique and methods that have been used in developing the emotional corpus based on text. The methodology used in this paper is by applying a systematic approach known as the Preferred Reporting Items for Systematic reviews and Meta- Analyses (PRISMA). The articles that have been reviewed through SLR are obtained from the Scopus online database. Articles are selected based on the time range between years 2011 until years 2020.These articles are reviewed and analyzed through four PRISMA approaches which is the Identification, Screening, Eligibility and Included approach. After going through the process, this paper managed to get 35 articles for the purpose of SLR for detail reviewed. Initiating SLR in this study, several components or areas are identified for the reviewing purpose. This paper review regarding the method applied, the domain or application, modality, name of the corpus involved, the label of corpus (language) and then what is the measurement based they used in the methodology in their study. At the end of the study, this paper significantly brought a summary in helping to understand the available method and technique used for emotion recognition based on text for the purpose of emotional Corpus development hence identifying the most applicable method used. This bring as a source based for the future works in developing Malay emotional Corpus

BabyCart : A Conceptual Business Model that Gives Benefits for Parents and B40 Community

Nurul Jannah Hussain, Siti Nur Aishah Sulaiman, Nur Ain Ishak, Nur Maisara Ahmad Rasid and Abdul Rahman Ahmad Dahlan
International Islamic University Malaysia
kyuhjan98@gmail.com

Abstract

The objective of this paper is to offer a conceptual BabyCart business model including a digital platform/apps that is aligned with United Nations Sustainable Development Goals (SDG). With the new life progress, new norms that people need to adapt during this pandemic and fast development of technology, the BabyCart business model and platform offers potential advantages to its users. The intended users known as Customer Segments in this paper of this platform are low income families or B40, single mothers, busy parents and sellers. BabyCart offers a wide selection of baby products with a reasonable and affordable price and babysitting services. This paper recognises a few key problems and extreme pains of the Customer Segments and the suggested ways in overcoming or addressing those problems. The key problems also include poverty among Malaysian (SDG 1 - No Poverty), unemployment issues (SDG 8 - Decent Work and Economic Growth), and ensuring sustainable consumption (SDG 12 - Responsible Consumption and Production). This paper adapts the Design Thinking (DT) methodology in identifying key problems and developing possible viable solutions. This methodology includes conducting literature review, benchmarking and surveys/interviews to understand and define customer segments problem space; as well as ideating, prototyping and testing possible solution space. The business modelling tools namely the Environmental Map (EM), Business Model Canvas (BMC), Value Proposition Design Canvas (VPC), and Strategy Canvas (SC) were used both in the customers' problem space as well as the solution space. An initial business model prototype was formulated – in the form of EM, BMC, VPC and low fidelity BabyCart prototype; tested and validated by various customer segments. Hence, the main contribution of this paper is to offer a validated or enhanced conceptual BabyCart business model as a conceptual solution in solving the unemployment issues for B40, increase sales for sellers and to give parents a digital platform where they can buy baby products

E-Tailor Hub: A Conceptual Digital Platform Business Model to Enhance B40 Quality of Life via Sustainable Consumption Entrepreneurship

Nurul Najihah Binti Khairul Najmy, Siti Hajar Binti Borhanuddin, Nur Dhiya Alyani Binti Raduan, Siti Salbiah Binti Azmi and Abdul Rahman Ahmad Dahlan

International Islamic University Malaysia

najihahnajmy16@gmail.com

Abstract

This paper is to offer a conceptual digital platform business model, called E-Tailor, that includes providing digital apps/platforms where sellers and buyers can get various types of tailored, new, and used clothes. This business model is aligned to the United Nations Sustainable Development Goal (SDG) 12, to reduce effects on nature, with more sustainable consumptions. This includes producing on demand to reduce overproduction, to ensure that the clothes are reused, to recycle products when they are worn out and to let customers rent clothes instead of buying them. Renting instead of buying would secure returned products to be used again or recycled. E-Tailor helps sellers and consumers including searching for clothes related products and services as well as selling and promoting tailored, new, and used clothes. Since the Covid-19 lockdown, many have been impacted by the pandemic as many people lost their jobs and businesses. This business model offers retrenched B40 workers with reskilling and upskilling programmes on mind-set shift, tailoring and digital entrepreneurship. Thus, enhancing job opportunities to the B40 community as employees or entrepreneurs. Used clothing or items can also be donated, rented, or sold as to reduce the amount of clothes waste. The Design Thinking (DT) methodology adapted in this paper is to understand and define the key problems; ideation of possible solution options, validation of solution options by various customer segments; and to suggest a conceptual business model and solution. This includes conducting literature review and benchmarking, conducting interviews using the business modelling tools which are Environment Map (EM), Business Model Canvas (BMC), Value Proposition Canvas (VPC), and Strategy Canvas (SC). An initial business model prototype was formulated – in the form of EM, BMC, VPC and low fidelity E-Tailor prototype; tested and validated by various customer segments. Hence, the main contribution of this paper is to offer a validated conceptual E-Tailor platform business model as a conceptual solution in addressing: (a) SDG 1 and 8 – reducing the unemployment rate, by reskilling and upskilling for employment, empowering, and nurturing B40 as entrepreneurs; (b) SDG12 – supporting sustainable consumption through selling, buying, renting, recycle and donation of tailored, new, and used clothes.

A Review of Information System Models to Increase Reading Habit

Faizal Hazri Mat Ripin, Mohd. Zamri Osman, Awanis Romli and Wahidah Mohd Zain

Universiti Malaysia Pahang (UMP)

faizalhazri@iium.edu.my

Abstract

The declining trend of reading habits based on the recorded literacy rate in Malaysia from 1980 to 2021 has prompted academicians and practitioners of various disciplines to explore ways of increasing reading habits at the individual level. Studies have shown that students who read less have problem-solving incompetence. There were less competitive new graduates and poorly-performed students. The lack of information system or technology that promotes reading patterns can be attributed to that fact. There is a need to implement various approaches to a higher readership—for an example, an information system with key factors influencing students to read more. This paper aims to review the existing models developed in modelling the information system to increase the reading habit. The literature search method will be used in identifying the most comprehensive model that can be implemented in modelling the information system to increase the reading habit. Since prominent models of behaviour and information system setting have been used as the base for developing the models for the reading habit setting, selected prominent models and will highlight their limitations. It is found, Persuasive System Design model is the most comprehensive model in modelling the information system to increase reading habit. This paper also suggests that pre-university should adopt models developed originally from the reading habit setting as different type of users have a different set of expectations and needs. Not much research has been addressed to issues on information system models and to increase reading habit. The findings should be valuable to academics and practitioners alike.

The Study of Social Media Contribution for Knowledge Sharing in Maqasid Al-Shariah

Siti Nur Syamimi Zailan and Mohamad Fauzan Noordin
International Islamic University Malaysia
syamimizailan@gmail.com

Abstract

The need to obtain information quickly has driven the development of Social Media technology innovation in establishing digital communications. People use Social Media extensively worldwide as they see it as an essential tool in their daily lives. In organizations, knowledge has always been a valuable resource. As Social Media becomes more advance this day, it can be one of the tools for sharing knowledge or information. However, in terms of content and connectivity, Social Media usage for information sharing has produced a difficult circumstance. A research by (Shompa et al., 2019), from an Islamic viewpoint, a person should be careful to use Social Media correctly. Inappropriate Social Media usage causes us away from Allah and His command. Despite the social benefits provided by Social Media, it may create a burden on the user. It may make some incompatible issues with Maqasid Al-Shariah (Islamic objectives) such as fake news, violation of privacy, incitement to hatred, some electronic fraud, children's extortion, and people's adverse judgment. In this research, the researcher will present Social Media for Knowledge Sharing and the Islamic's objectives in the Protection of Aql (Mind/Intellect). Islam ordered Muslims to prevent evil actions while using Social Media to protect the intelligence on Social Media. By spreading false knowledge-related material and throwing derogatory comments against those in disagreement that can harm their intellect.

Key Role of Bug Triager in Triaging Decisions

Sohaib Altaf Raja, Madihah Sheikh Abdul Aziz and Asadullah Shah
International Islamic University Malaysia
suhaibraja@hotmail.com

Abstract

The 'term' triage is often used in the medical field for handling patients for their treatment necessity on basis of their health condition and the same term is adopted to refer handling of software bugs for their resolution purpose on the basis of their status. Bug triager have to make important decisions for handling a large volume of incoming bugs which includes categorizing bug reports for different purposes that include finding invalid bugs, removing duplicate bugs, analyzing fixation effort, finding impactful bugs, determining their severity, defining their priority and working-around different resolution options. Review of various bug datasets reveals that bug triager has to perform multiple triaging operations on bug reports using tags, reusing available solutions, extracting historical data, evaluating comments, reviewing voting, analyzing pull requests, analyzing time-based activities and managing coordination among people for various roles. Literature through empirical observations evaluates various bug triaging activities; however, operations of bug triagers which they perform while managing bug triaging processes are not exclusively identified. Hence, there is a gap to model bug triaging activities and various operations that are performed by bug triagers in handling bug reports. As far as to our knowledge, bug datasets have not been reviewed from the perspective of analyzing the role of bug triagers. The paper identifies various operations that are performed by bug triagers in managing bug triaging activities. The methodology in this research includes document analysis of reported studies on bug triaging process and available bug datasets in order to identify the role of bug triagers. The type of data in bug datasets is textual, categorical, images, files, videos, human roles and temporal data whereas nature of overall data is qualitative and quantitative. This paper contributes a bug triaging model which illustrates operation of bug triagers for managing triaging activities and their inter-linkages.

CALL FOR ABSTRACTS / PAPERS

ICT4M 2021

International Conference on Information & Communication Technology for the Muslim World

"Embracing eHealth in Facing the Challenges of IR4.0 in the Muslim World"

in conjuction with **2021 World Congress on Integration and Islamicisation**
https://conference.iium.edu.my/wcii

Tan Sri Prof Dr Mohd Kamal Hassan
Former Rector, International Islamic University Malaysia (IIUM)

Prof Dr Abdul Wahab Abdul Rahman
International Islamic University Malaysia (IIUM)
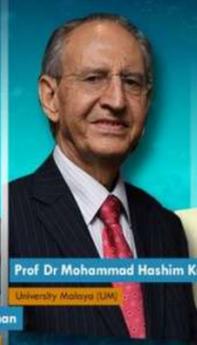
Prof Dr Mohammad Hashim Kamali
University Malaya (UM)

Prof Dr Omar Kasule
King Faisal City of Medicine, KSA

Dr Aasim Padella
Faculty of Medicine, Chicago University, USA

Assoc Prof Dr Nora Mat Zin
International Islamic University Malaysia (IIUM)

IMPORTANT DATES

Deadline for abstract/full paper submission:
7 April 2021
1 April 2021

Notification of Acceptance: 15 Apr 2021

Deadline for full payment registration: 1 May 2021

To register, please click on the following link:
http://ict4m.iium.edu.my/

For any enquiries please contact:
ict4m@iium.edu.my or +6011-1115 7047

📅 **4 - 6 June 2021**

All accepted papers will be published in one of the followings journals:

EAI Endorsed on Pervasive Health and Technology (SCOPUS)

EAI Endorsed on Scalable Information System (DOAJ) (Web of Science Core Collection)

International Journal of Psychosocial Rehabilitation (SCOPUS) (Scimago)

NeuroQuantology (SCOPUS) (Scimago)

Walailak Journal of Science and Technology (SCOPUS)

Journal of Information Systems and Digital Technology International (MyCite)

Journal of Perceptive and Cognitive Computing Technology (MyCite)

CONFERENCE TRACKS

TRACK 1: ISLAMIC APPLICATION FOR UMMAH DEVELOPMENT

TRACK 2: IS IMPLEMENTATION, GOVERNANCE AND CHALLENGES

TRACK 3: COMMERCIALIZATION AND ENTREPRENEURSHIP

TRACK 4: INNOVATION IN ISLAMIC FINANCE

TRACK 5: COMPUTING TECHNOLOGIES AND APPLICATIONS

TRACK 6: UNCERTAIN DATA MANAGEMENT IN BIG DATA AND OPEN DATA/OPEN SCIENCE

TRACK 7: BLOCKCHAIN-INSPIRED CUSTODIAL SOLUTIONS

REGISTRATION FEE*

	NEW FEE	Student Rate	KICT FYP/UG Student Rate	Financial Assistance Rate
Presenter (Abstract/Full Paper)	RM 350 (USD 90)	RM 50 (USD 15)	RM 20 (USD 7)	RM 50 (USD 15)
Presenter (subsequent abstract/paper)	RM 50 (USD 15)			
Attendee (without abstract/paper submission)	RM 100 (USD 27)			

*Please refer to the website for Terms & Conditions

LEADING THE WAY
KHALIFAH • AMANAH • IQRA' • RAHMATAN LIL-'ALAMIN

KICT OFFICIAL