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## Proceedings of IASDR 2023: Life-changing Design

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THE 2023

# IASDR Congress

Life-  
changing  
design

Milan 9<sup>th</sup>–13<sup>th</sup> October

PROCEEDINGS OF IASDR 2023

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Davide Spallazzo



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# Life-Changing Design

Proceedings of the 10th Congress of the  
International Association of Societies of  
Design Research (IASDR 2023)

**EDITORS:**

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# The Tenth IASDR congress. An Introductory Address from the IASDR Board

IASDR 2023 is the 10th biennial congress of IASDR, and the first to take place after the crisis of COVID-19. With this congress we re-confirm the importance of discussion and debate for the network of researchers in design, as well as the importance of developing younger researchers for the future of the Association.

The International Association for Societies of Design Research (IASDR) was established in 2005 through a collaboration of four academic societies: Chinese Institute of Design (CID), the Design Research Society (DRS), Korean Society for Design Science (KSDS) and Japanese Society for the Science of Design (JSSD).

The history of international collaboration in Design Research in the Asian region can be traced back to 1996 when JSSD organized the first Japan-China Industrial Design Symposium which was hosted by Beihang University in Beijing, 1996. This started a series of international conferences in design research known as the Asian Design Conference. Conferences took place in 1997 (Daejeon, Korea at KAIST), 1998 (Taichung, Taiwan at National Taichung University of Science and Technology), 1999 (Nagaoka, Japan at Nagaoka University of Technology), 2001 (Seoul by National Seoul University), and 2003 (Tsukuba, Japan at Tsukuba International Congress Center). At the 2003 congress – the 6th Asian Design Conference – the three Asian academic societies agreed to welcome the Design Research Society into a new association.

We thus began the International Association of Societies of Design Research for the field of design research in 2005, in Taiwan. Since that time, we have enhanced the network of researchers and fields of design research and promoted design research education. We will continue to build this incomparable network of design research as we move towards our 2025 congress, at Tapei, Taiwan.

Our deepest thanks go to Luisa Collina, and the entire Politecnico Milano team who have worked so hard, as hosts for IASDR2023, to ensure its success. Your leadership throughout the process has been excellent and we think the result will be much appreciated by the IASDR design research community.

Toshimasa Yamanaka  
President

On behalf of the IASDR Board  
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Tek-Jin Nam  
Fong-Gong Wu  
Lin-Lin Chen  
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# Life-Changing Design.

## Introduction to the Tenth IASDR congress

The International Association of Societies of Design Research (IASDR) has long been at the forefront of advancing design research, providing an international platform for researchers, scholars, and practitioners to engage in robust discussions, share insights, and explore the ever-evolving landscape of design research. IASDR 2023, the association's 10th Congress, stands as a pivotal juncture in the trajectory of design research, offering a comprehensive perspective on its current state while charting its future directions.

Over the past decade, design research has witnessed a remarkable transformation. From its roots in aesthetic considerations and form-centric approaches, design research has evolved into a multifaceted discipline, extending its influence beyond traditional boundaries. Contemporary design literature now encompasses a wide array of facets, each addressing critical aspects of design's impact on diverse domains, including organisational culture, public policies, product development, and the creation of immersive spaces, services and systems. This transformation underscores the dynamic nature of design research, as it continuously adapts to our society's changing demands and challenges.

The central theme of IASDR 2023, "Life-Changing Design", resonates profoundly in the wake of global events, particularly the unprecedented disruptions caused by the COVID-19 pandemic. This theme invites us to reflect on the profound transformations that have unfolded and continue to reshape our world. The pandemic has brought to the forefront questions about the role of design in navigating these changes, challenging us to explore how design can facilitate adaptation, resilience, and innovation in a rapidly changing world.

IASDR 2023 has been organised and host by Politecnico di Milano, where design keeps strong roots in the made in Italy tradition and where at the same time design opens up to the new territories of design research and to the new trajectories of innovation.

IASDR 2023 encompasses an array of thematic tracks, each dedicated to exploring critical dimensions of design research. These tracks serve as focal points for discussions and investigations, providing a framework for researchers to delve into specific areas of interest.

The following thematic tracks guide our exploration:

### **[Changing] Organizations and Policies**

This track examines the transformative potential of design in the realm of public sector organisations and policies. It aims to foster social justice and sustainability by challenging traditional notions of prosperity. Researchers investigate how design equips itself with tools, methods, and frameworks to support systemic transformation, thereby promoting well-being and addressing complex societal challenges.

### **[Changing] Products and Production**

This track focuses on the transformation of manufacturing processes and their impact on products and



systems. It explores the proliferation of digital fabrication and digital craft, analysing their potential to revolutionise product development, sustainability, and business models. Researchers delve into how design can envision emerging materials, artefacts, and future scenarios from a sustainable perspective.

### **Identities and [Changing] Identities**

Cultural identities and their evolution in an increasingly multicultural world take center stage in this track. Researchers delve into the roots of design's influence on identity, considering factors such as authorial identities, identity hegemony, and the implications of design on gender, class, and religion. Additionally, this track explores the role of design in translation processes, which involve revising systems, tools, and programs for communicating and preserving identity.

### **[Changing] Ecosystems**

Addressing the imperative transition toward sustainability, this track examines how design contributes to the socio-ethical and economic dimensions of sustainability. It explores design for sustainable materials, energy, business models, and transitions, focusing on fostering positive environmental and social change.

### **[Changing] Communities**

Community empowerment and sustainable behavioural change through design interventions are central to this track. Researchers investigate how design can enhance collaborative processes, co-design knowledge, and tools while addressing urgent public interest issues. The track emphasises shared decision-making, democratic participation, and the evolving roles of individuals, communities, and entities in supporting systemic transitions.

### **[Changing] Education**

This track reflects on the evolving landscape of design education, recognising the complexities and challenges inherent in this domain. Researchers explore the inspirations for change in design education, the transformations it engenders, and the existing gaps and issues. This track seeks to foster clarity, identity, and adaptability in designing educational goals while embracing diversity and differentiation.

### **[Changing] Spaces and Services**

Integrating spatial and service design to create innovative living environments and services is the central concern of this track. It explores how design interventions across various scales, from micro to macro, can drive transformative actions, enhance public participation, and guarantee inclusivity and diversity in service offerings.

### **[Changing] Interactions**

The dynamic interplay between technology, social changes, and design forms the core of this track. Researchers investigate how digital technologies, augmented reality, virtual reality, and mixed environments impact interactions, communities, processes, and professions. This track emphasises the role of Interaction Design in shaping technology-based innovations responsive to social and contextual changes.

### **[Changing] Heritage**

Preserving and reinterpreting cultural heritage in the face of global change is the central focus of this track. Researchers explore how design research can offer novel approaches to knowledge preservation and cultural experiences related to tangible and intangible heritage. This track seeks to activate participation dynamics that reintegrate relevant portions of cultural heritage excluded from current development paradigms.

IASDR 2023, with its overarching theme of "Life-Changing Design" and its diverse thematic tracks, presents an exceptional opportunity for researchers, scholars, and practitioners to engage with the dynamic landscape of design research. The conference serves as a platform for robust discussions, knowledge sharing, and the exploration of innovative solutions to society's complex challenges.

By examining these thematic tracks and their intersection with the central theme, “Life-Changing Design,” we aim to contribute to the ongoing dialogue surrounding design research and its transformative potential, fostering a deeper understanding of design’s role in shaping our world.

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Alessandro Deserti  
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**Material connaissance as a tacit knowledge co-creation method**

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**More than human empathy: a caring approach to ecosystemic design**

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**Navigating circularity in practice: proposing a decision-making tool for guiding circular product development**

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**Out with the new, in with the old: Future directions for Design for Sustainability**

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**Planet-Oriented Design: a proposal for new ethical transitions in Design Education**

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<https://doi.org/10.21606/iasdr.2023.506>

**Small fish in a big pond: Product Longevity Design Strategies for Smart Speakers**

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<https://doi.org/10.21606/iasdr.2023.290>

**Sustainable design strategy of Chinese old Town community based on landscape ontology:  
A case study of Daojiao Community in Chongqing**

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<https://doi.org/10.21606/iasdr.2023.260>

**The social influences of digital technologies in the Design of S.PSS and DE: A literature review**

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<https://doi.org/10.21606/iasdr.2023.415>

**The use of life cycle assessment for lightweight product design based on functional unit**

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**Emerging decentralized infrastructure networks**

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**User decision making for end of use product: Exploring the reasons for keeping and care  
motivations for responsible sharing**

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<https://doi.org/10.21606/iasdr.2023.362>

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<https://doi.org/10.21606/iasdr.2023.888>

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<https://doi.org/10.21606/iasdr.2023.359>

**Approach or Avoid Away from Kiosks for the Elderly? A Study on Acceptance and Behavioral  
Intention of Self-Service in Hospitals**

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**Can't spell 'medicine' without 'me': Finding the spirit of co-design in multidisciplinary collaboration**

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**Co-design for interdisciplinary research communities**

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**Design activating agency: a study on rural community co-creation in China under non-anthropocentrism**

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**Embedding and embodying narratives in the collaborative development of life-changing healthcare technologies**

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**Design for social imagination**

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**Design teams' behaviors and idea development in using "IDEATOR"**

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**Designing chatbot as observation media of elders' cognitive health in daily activities**

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**Developing a child-friendly outdoor public playground for children aged 4-8, through co-creation mindset**

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**Developing a community-engaged homemaking approach to elicit a sense of belonging in people with dementia**

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**Dualities of co-design in the context of dementia: Can handover approaches provide an answer?**

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**Embedded actors in design objects: reflexivity in design for social innovation**

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**Future Systemic and Value Mapping as a Tool for Peace and Deliberation**

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**Immigrant Integration through Codesign – A Journey Map of integration into working life**

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**Increasing preventive care through increased access to healthy foods**

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**Innovative collaboration and co-designing with Santhal and Mohli tribes of Dumka, India**

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**Offline and online collaboration in providing service design projects for social innovation to villages: a co-creative action in Quanzhou**

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**Relational design practices in design for social innovation: a place-centred approach**

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**Seniors with early AD in China: study of a Design for All (DfA) approach for a transformed, happier family life**

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**Shaping Social Design with communities**

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**Social innovation through regenerative perspectives: a theoretical approach on gender-based violence system**

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**Systemic design for sustainable community care for older adults: A case study in Turin, Piedmont, Italy**

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**The role of participatory transition design in mitigating erosion of participatory democracy**

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**Transformative effects of co-design: The case of the “My Architect And I” project**

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**[Changing] Education****Front Matter**

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**A production pipeline for an AI-powered design course**

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**An interdisciplinary design framework for creative collaboration**

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**Building design agency through bodystorming**

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**Climate Adaptation in Design Education: Applying a four-step Research by Design Strategy**

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**Combination of Experiential Learning to investigate design students' design thinking ability**

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**Compass for the Voyage of Ideation: Unlocking the Stimulation Potential of Service Design Heuristics**

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**Confidence and doubt in doctoral research: The temptation of certainty**

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**Design fiction and the art of anticipation**

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**Design Futures to support Sustainable Food practices**

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**Design laboratories system as a tool to enable interdisciplinary design learning: analysis of common approaches and new perspectives**

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**Designerly activity theory supporting research-through-design**

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**Designing collective racial healing spaces**

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**DIP into the Future: Building a Design Curriculum to Enable Design Students to Work with Machine Learning**

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**Guiding into the unknown. A dialogue between design and yoga for mindful design education**

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**How might we design alternative worldviews? Assessing a design education program for business professionals**

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**Investigation of creativity and Experiential learning composition in design teams**

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**Learning technology with beginner-friendly software: design students' on attitude towards software alternatives**

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**PhotoReflexivity: supporting Reflexivity for Students in Design Education**

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**ProVi – a transforming vision emerging from reflective practice**

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<https://doi.org/10.21606/iasdr.2023.361>

**Teaching to transfer causal layered analysis from futures thinking to design thinking**

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**The role of human-centred design in promoting understanding of local contexts: a study of Japanese students addressing social issues in Bangladesh**

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**Towards a Design Observatory in Portugal – results, reflections and future steps**

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**Unleashing a creative explosion: channeling expert strategy into Service Design Heuristic Cards**

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**Unlocking creative potential: idea generation training for design students**

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<https://doi.org/10.21606/iasdr.2023.409>**Usage of Service Design Pattern Language as a method for beginners to effectively acquire their behaviors towards design**

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<https://doi.org/10.21606/iasdr.2023.505>**[Changing] Spaces and Services****Front Matter**

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<https://doi.org/10.21606/iasdr.2023.892>**Data Challenge. Re-thinking the library as a learning space to intersect youth, culture and gender diversity**

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Simona Colitti, University of Bologna, Italy

Margherita Ascari, University of Bologna, Italy

Lorela Mehmeti, University of Bologna, Italy

<https://doi.org/10.21606/iasdr.2023.471>**Design Characteristics in Outdoor Seating Areas – A study of coffee shops in Hong Kong and Copenhagen**

Mia Münster, School of Design, The Hong Kong Polytechnic University, Hong Kong

<https://doi.org/10.21606/iasdr.2023.216>**Designing therapeutic and social spaces for older adults facing Mild Cognitive Impairment: Priorities in spatial and furniture layout**

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Machry Herminia, University of Kansas, USA

Leandro M. Tonetto, Georgia Institute of Technology, USA

<https://doi.org/10.21606/iasdr.2023.174>**Mapping urban regeneration through multiple dimensions of temporality: A visual analysis of three approaches to Theory of Change**

Hadas Zohar, Aalborg University, Denmark

Luca Simeone, Aalborg University, Denmark

Amalia de Götzen, Aalborg University, Denmark

Nicola Morelli, Aalborg university, Denmark

<https://doi.org/10.21606/iasdr.2023.105>**Metro interior design to reduce the occurrence of metro congestion**

Peng Ji, Hunan University, China

Yuxin Wen, Hunan University, China

Li Zhou, CRRC Zhuzhou Locomotive Co., Ltd.

<https://doi.org/10.21606/iasdr.2023.548>

**Office space design based on Kano Model, AHP, QFD Methods**

Yilan Jin, University of Edinburgh, UK

<https://doi.org/10.21606/iasdr.2023.166>**Visual and spatial design for proximity healthcare: the meta-design book of “Case e Ospedali di Comunità” of Regione Lombardia**

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<https://doi.org/10.21606/iasdr.2023.430>**Yearning for Revival\_Using Healing as the Linking Strategy to Recreate Emotionally Resilient Communities**

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<https://doi.org/10.21606/iasdr.2023.148>**[Changing] Interactions****Front Matter**

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Panos Markopoulos, Eindhoven University of Technology, The Netherlands

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<https://doi.org/10.21606/iasdr.2023.887>**A personality-centred design approach for virtual humans on correspondence with roles and behaviors**

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<https://doi.org/10.21606/iasdr.2023.411>**A Study on the Sense of Being Alive Expressed in Motion**

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Youngil Cho, Hokkaido University of Science, Japan

<https://doi.org/10.21606/iasdr.2023.463>**AIXE. Building a scale to evaluate the UX of AI-infused products**

Martina Sciannamè, Politecnico di Milano, Italy

Davide Spallazzo, Politecnico di Milano, Italy

<https://doi.org/10.21606/iasdr.2023.355>**Colour in virtual classroom: Effects of colour schemes and interior elements on students' preference and attention**

Dajeong Jang, Hanyang University, South Korea

Kyungah Choi, Hanyang University, South Korea

<https://doi.org/10.21606/iasdr.2023.472>

**Design considerations for supporting social interaction in algorithmic social media feed**

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Heejae Bae, Korea Advanced Institute of Science and Technology, South Korea  
Youn-kyung Lim, Korea Advanced Institute of Science & Technology, South Korea  
<https://doi.org/10.21606/iasdr.2023.536>

**Designer Empathy in Virtual Reality: transforming the Designer Experience closer to the User**

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Andrew Wodehouse, University of Strathclyde, UK  
Ross Brisco, University of Strathclyde, UK  
<https://doi.org/10.21606/iasdr.2023.380>

**Designing an interactive system based on pose-estimation to support rhythmic gymnastics basic coaches in enhancing their learning**

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<https://doi.org/10.21606/iasdr.2023.571>

**Designing interfaces for text-to-image prompt engineering using stable diffusion models: a human-AI interaction approach**

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<https://doi.org/10.21606/iasdr.2023.448>

**Designing the interaction between humans and autonomous systems: The role of behavioral science**

Dirk Van Rooy, University of Antwerp, Belgium  
<https://doi.org/10.21606/iasdr.2023.457>

**Designing the prosthetic appearance in virtual reality with the collaboration of participants and users**

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<https://doi.org/10.21606/iasdr.2023.177>

**Designing visuo-haptic illusions for Virtual Reality applications using floor-based shape-changing displays**

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Seungwoo Je, Southern University of Science and Technology, China  
<https://doi.org/10.21606/iasdr.2023.466>

**E-Motioning: Exploring the Effects of Emotional Generative Visuals on Creativity and Connectedness during Videoconferencing**

Tianqin Lu, Eindhoven University of Technology, The Netherlands  
Jun Hu, Eindhoven University of Technology, The Netherlands  
<https://doi.org/10.21606/iasdr.2023.101>

**Elderly's Perceptions of a Meaningful Interaction with Voice-Based Conversational Agents: Integrate into daily routines, Support relatedness, But do not hamper autonomy**

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<https://doi.org/10.21606/iasdr.2023.344>



**Embracing digital offboarding as a design challenge**

Sabine Junginger, Lucerne University of Applied Sciences and Arts, Switzerland

<https://doi.org/10.21606/iasdr.2023.393>**Examining the affordance effect of shifting symbols on the virtual buttons of smartphones**

Ming-Da Wu, National Cheng Kung University, Taiwan

Hsi-Jen Chen, National Cheng Kung University, Taiwan

<https://doi.org/10.21606/iasdr.2023.482>**Exploring multimodal technologies to engage elderly people in remote communication with their family**

Baihui Chen, Southern University of Science and Technology, China

Xueliang Li, Southern University of Science and Technology, China

<https://doi.org/10.21606/iasdr.2023.441>**Fixing the Future: Cultivating a Capacity to Repair IoT Devices through Experiential Futures**

Matthew Pilling, Lancaster University, UK

Michael Stead, Lancaster University, UK

Paul Coulton, Lancaster University, UK

Thomas Macpherson-Pope, The Making Rooms

<https://doi.org/10.21606/iasdr.2023.474>**For who page? TikTok creators' algorithmic dependencies**

Laura Herman, University of Oxford, UK

<https://doi.org/10.21606/iasdr.2023.576>**How smart is the Italian domestic environment? A quantitative study**

Annapaola Vacanti, Università Iuav di Venezia, Italy

<https://doi.org/10.21606/iasdr.2023.206>**How to promote consumption in city metaverse? Research on XR experience design and consumer behavior of commercial streets**

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<https://doi.org/10.21606/iasdr.2023.103>**Human-AI system co-creativity for building narrative worlds**

Anca Serbanescu, Politecnico di Milano, Italy

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<https://doi.org/10.21606/iasdr.2023.293>**Identifying meaningful user experiences with autonomous products: a case study in fundamental user needs in fully autonomous vehicles**

Garoa Gomez-Beldarrain, Delft University of Technology, The Netherlands

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Siyuan Huang, Delft University of Technology, The Netherlands

Euiyoung Kim, Delft University of Technology, The Netherlands

<https://doi.org/10.21606/iasdr.2023.434>**Improving the healthcare experience: Developing a comprehensive patient health record (PHR)**

Christine O'Dell, Pratt Institute, New York, USA

Sandra Gabriele, York University, Canada

<https://doi.org/10.21606/iasdr.2023.311>

**Introducing the third space of design for well-being: Exploring the intersection between problem- and possibility-driven design through a design case on online dating experience**

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<https://doi.org/10.21606/iasdr.2023.513>

**Investigating the effectiveness of Peripheral Vision in reading digital speed limit information displayed in AR-HUD technology**

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<https://doi.org/10.21606/iasdr.2023.117>

**Multi-view visualization layout design method for large displays based on quantitative analysis of situation awareness**

Peng Ji, Hunan University, China  
Xuan He, Hunan University, China  
<https://doi.org/10.21606/iasdr.2023.481>

**Olfactory Stimulus as Design Material: designing an engaging interaction between user and AI chatbot**

Cecilia Lee, Royal College of Art, UK  
<https://doi.org/10.21606/iasdr.2023.504>

**Performance evaluation of QWERTY keyboards on foldable smartphones: keyboard layout and phrase complexity**

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<https://doi.org/10.21606/iasdr.2023.404>

**Plant Playmate: exploring effects of interactive plants for mental wellness microbreaks during knowledge-based work**

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<https://doi.org/10.21606/iasdr.2023.416>

**Play with data: Using haptic properties of artifacts to augment data representation**

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**Post-pandemic era: evaluation of Quality of Life and Usability Testing for elderly rehabilitation app design**

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**Preserving theoretically-grounded functions across media platforms in interaction design**

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**Research on user needs for gesture interaction of foldable smartphones: comparison between current and potential users**

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<https://doi.org/10.21606/iasdr.2023.192>

**Rethinking designer agency: A case study of co-creation between designers and AI**

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<https://doi.org/10.21606/iasdr.2023.478>

**Scalable eHMI: Automated vehicles-pedestrian interactions design based on gestalt principles**

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<https://doi.org/10.21606/iasdr.2023.555>

**Techno-social correlations in responsive environments**

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<https://doi.org/10.21606/iasdr.2023.201>

**The Dronetic Moment: Future of drone light show & lighting design in concerts**

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<https://doi.org/10.21606/iasdr.2023.208>

**The Russia-Ukraine war and climate change: Analysis of one year of data-visualisations**

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<https://doi.org/10.21606/iasdr.2023.431>

**Threshold space design: Using water element for phase transition from physical space to virtual space with different law of gravity**

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<https://doi.org/10.21606/iasdr.2023.433>

**Touchy-feely: A designerly exploration of haptic representations of three mood states**

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<https://doi.org/10.21606/iasdr.2023.325>

**Transforming resilient healthcare systems: mapping the pathway forward with healthcare 4.0 technologies**

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<https://doi.org/10.21606/iasdr.2023.133>

**Understanding the relationship between in-car agent's embodiments and information with different criticality**

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<https://doi.org/10.21606/iasdr.2023.579>

**Using AR HMD in exhibition: Effects of guidance methods and spatial relative positions**

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Xuanhui Liu, College of art and Archaeology, Hangzhou City University, China  
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<https://doi.org/10.21606/iasdr.2023.143>

**What's the Social Trust Mechanism Blending Virtual and Reality in the Context of Digital Media?**

Yunlu Liu, Kingston University of London, UK  
Yuqi Liu, Tsinghua University, China  
Tongwen Sun, Soochow University, China  
Mingshuo Zhang, Soochow University, China  
<https://doi.org/10.21606/iasdr.2023.425>

**When to say bye: A qualitative study of older adults' discontinuation of technology use after the pandemic**

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<https://doi.org/10.21606/iasdr.2023.351>

**[Changing] Heritage****Front Matter**

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Mason Marco, Northumbria University, UK  
<https://doi.org/10.21606/iasdr.2023.896>

**AI Promotes the Inheritance and Dissemination of Chinese Boneless Painting—Research on Design Practice from Interdisciplinary Collaboration**

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Changjuan Ran, Hunan University, China

Mohan Zhang, Hunan University, China

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**Applying generative art to cultural and creative product design to construct human-product relationship**

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**Design and the reframing of participatory approaches in Cultural Heritage and museums beyond pandemic crisis**

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**Digital for Heritage and Museums: Design-Driven Changes and Challenges**

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**Educating the attention of museum visitors through non-verbal art mediation**

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Anders Sundnes Løvlie, IT University of Copenhagen, Denmark

<https://doi.org/10.21606/iasdr.2023.222>

**GIAHS Metaverse: innovative digital transformation of agricultural heritage**

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**Graphic standards in graphic heritage: Scope, scale, and unity through multiplicity in Islamic design**

Robert George Harland, Loughborough University, UK

<https://doi.org/10.21606/iasdr.2023.498>

**Inheriting the Intangible Cultural Heritage and embracing innovation: Digital Rubbing leads a new Experience of Audience Interaction in museums**

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Tie Ji, Hunan University, China

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**Museums at a crossroads**

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**Museums on-chain? A designerly contribution in the development of blockchain-based digital strategies in cultural institutions**

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**Places of worship digital information dissemination design strategy in communication ritual view**

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**Product design proposal for a relaxation space with 'Mindfulness' meditation**

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**Research on Urban Brownfield Landscape Design from the Perspective of Environmental Interaction - Taking the Former Site of Jiangnan Cement Factory as an Example**

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**Review: design reshape the relationship between museum collections and visitors in digital age**

Siwei Wang, Hunan University, China

Danhua Zhao, Hunan University, China

Shizhu Lu, Hunan University, China

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**Service co-design to envision the transformation of museums**

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Georg Regal, Austrian Institute of Technology, Austria

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**Study on key elements of kids cartoon design in Min-nam (Hokkien) language**

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**Study on the development strategy of HuiShan clay figurine from the perspective of urban symbolism-taking the design strategy of NANIMOMO blind box series as an example**

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<https://doi.org/10.21606/iasdr.2023.154>

**Study on the Status Quo and Sustainable Renewal Strategies of the Zhoutie Historic District in Wuxi, China**

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<https://doi.org/10.21606/iasdr.2023.193>

**Pictorials****Front Matter**

Marco Quaggiotto, Politecnico di Milano, Italy  
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<https://doi.org/10.21606/iasdr.2023.889>

**Convergence research and participatory design of a study furniture system for small living environments**

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**Domestic infrastructure of food: thoughts on community engagement through food, furniture, and architectural exhibition**

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<https://doi.org/10.21606/iasdr.2023.854>

**Exploiting co-design, game thinking and citizen science in a workshop-like experience for stimulating reflections with teens**

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**From Urban Development to the Pluriverse – Ontological Design for Natural and Cultural Heritage**

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**Glitch Pluriverse**

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Ying Tang, The New School, United States of America  
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<https://doi.org/10.21606/iasdr.2023.606>

**Hitonami: Speculative design for overcrowded mobility arenas in the 6G era**

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<https://doi.org/10.21606/iasdr.2023.813>

**Hydrogen aviation: Imagining future air travel experience scenarios**

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Leo Rezayan, Queensland University of Technology, Australia  
Jeremy Kerr, Queensland University of Technology, Australia  
Timothy Lim, Queensland University of Technology, Australia  
Waldemar Jenek, Queensland University of Technology, Australia  
Kenny Er Kang Lin, Queensland University of Technology, Australia  
Jake Day, Queensland University of Technology, Australia  
Stuart Johnstone, Stralis Aircraft, Australia  
Bob Criner, Stralis Aircraft, Australia  
Heather McKinnon, Queensland University of Technology, Australia  
<https://doi.org/10.21606/iasdr.2023.746>

**Making a scene: Representing and annotating enacted interfaces in co-performances using the screenplay**

Evert van Beek, Delft University of Technology, The Netherlands  
Elisa Giaccardi, Delft University of Technology, The Netherlands  
Stella Boess, Delft University of Technology, The Netherlands  
Alessandro Bozzon, Delft University of Technology, The Netherlands  
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**Pedagogy of Experimental Design: Scientific research methods in architectural education**

Assia Crawford, University of Colorado Denver, United States of America  
<https://doi.org/10.21606/iasdr.2023.833>

**Picturing interactivity: design exploration of a highly interactive picturebook**

Nicholas Vanderschantz, University of Waikato, New Zealand  
Claire Timpany, University of Waikato, New Zealand  
Kristy Wright, Thomas Wright Design, New Zealand  
<https://doi.org/10.21606/iasdr.2023.695>

**ShapeChips: Value formation in material ecosystem using buffer materials generated from wood chips**

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Taijiro Ishiko  
Yasuaki Kakehi, The University of Tokyo, Japan  
<https://doi.org/10.21606/iasdr.2023.694>

**Stories from an unfinished prototype: a seemingly never-ending loop of practice and research**

Daniel Echeverri, Masaryk University, Czech Republic  
<https://doi.org/10.21606/iasdr.2023.131>

**Sync: Novel BCI design for neural synchrony, connectedness, and empathy**

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Niv Siton, Tel Aviv University, Tel Aviv, Israel  
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<https://doi.org/10.21606/iasdr.2023.820>



**The full and the empty. A dialogue between Chinese painting and design**

Estelle Berger, Strate - School of design, France

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<https://doi.org/10.21606/iasdr.2023.609>

**The future archives: a speculative approach for visualising the impacts of 6G-enabled infrastructure in Japan**

Georgia Mackenzie, University of Tokyo, Japan

Federico Trucchia, University of Tokyo, Japan

Hemal Dias, University of Tokyo, Japan

<https://doi.org/10.21606/iasdr.2023.613>

**Tools for a Warming Planet**

Beth Ferguson, University of California Davis, United States of America

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<https://doi.org/10.21606/iasdr.2023.822>

**Towards a Design Toolkit for Exploring and Specifying Close-proximity Human-robot Collaboration as Leader and Follower: the Case of Collaborative Drawing**

Yi Zhao, The University of Sydney, Australia

Lian Loke, The University of Sydney, Australia

Dagmar Reinhardt, The University of Sydney, Australia

<https://doi.org/10.21606/iasdr.2023.689>

**Using cultural probes to understand students' mental wellbeing**

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**UX design approach to guide parametric product customization: a case for eyeglass frame design**

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Alejandro Lozano Robledo, University of Cincinnati, USA

Brigid O'Kane, University of Cincinnati, USA

<https://doi.org/10.21606/iasdr.2023.830>

**Short Papers****Front Matter**

Erminia D'Itria, Politecnico di Milano, Italy

Silvia Maria Gramegna, Politecnico di Milano, Italy

Xue Pei, Politecnico di Milano, Italy

<https://doi.org/10.21606/iasdr.2023.885>

**A field guide to visualisation-supported information disorders for media and information literacy**

Elena Aversa, Politecnico di Milano, Italy

<https://doi.org/10.21606/iasdr.2023.786>

**A holistic co-design model engaging multi-stakeholders for the rural revitalization in China — A case study of Qingshan Village, Hangzhou**

Liqi Ren, Duke Kunshan University, China

Tingting Chen, Wuhan University, China

Yinan Du, California Institute of the Arts, USA  
Jia Long, Duke Kunshan University, China  
Xinran Lai, Duke Kunshan University, China  
<https://doi.org/10.21606/iasdr.2023.710>

**A study on Technology Acceptance Model of AI speakers among middle-aged people**

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Ryoichi Tamura, Faculty of Design, Kyushu University, Japan  
<https://doi.org/10.21606/iasdr.2023.491>

**A systematic thinking on evaluation of community service facilities in the context of design**

Mao-en He, College of Design and Innovation, Tongji University, China  
Chang Liu, College of Design and Innovation, Tongji University, China  
<https://doi.org/10.21606/iasdr.2023.557>

**A systemic perspective on designing for well-being in dementia care: learning from the case of Dementia Friendly Communities**

Xiaolin Shen, Politecnico di Milano, Italy  
Daniela Sangiorgi, Politecnico di Milano, Italy  
<https://doi.org/10.21606/iasdr.2023.774>

**A systems thinking approach to codesign at a Montessori School**

Anna Chekhman, York University, Canada  
Martin J. Bunch, York University, Canada  
Shital Desai, York University, Canada  
<https://doi.org/10.21606/iasdr.2023.748>

**Adapting future designer curricula: A comparative analysis of design future skills in learning outcomes**

Emily Wright, Swinburne University of Technology, Australia  
<https://doi.org/10.21606/iasdr.2023.852>

**An investigation of empathy in face-to-face and remote co-creative design processes**

Namgyu Kang, Future University Hakodate, Japan  
Thongphun Khongthat, Chiang Mai University, Thailand  
<https://doi.org/10.21606/iasdr.2023.709>

**Archives of dyeing katagami used in the inheritance and creation of traditional patterns**

Minako Ikeda, Kyushu University, Japan  
<https://doi.org/10.21606/iasdr.2023.703>

**Are all Pokémons created equal? Assessing the value-neutrality of Pokémon TCG design process**

Minoru Matsui, Advanced Institute of Industrial Technology, Japan  
<https://doi.org/10.21606/iasdr.2023.875>

**Changing the Narrative: Co-designing awareness about Environmental Sustainability with children in Denmark**

Canan Akoglu, Design School Kolding, Denmark  
Marie Kremer, Design School Kolding, Denmark  
Craig Native, Aarhus Municipality, Denmark  
<https://doi.org/10.21606/iasdr.2023.660>

**Co-Designing Mental Health Futures: A case study on the development of a Residential Eating Disorders Facility**

Troy McGee, Monash University, Australia  
Leah Heiss, Monash University, Australia  
Myra Thiessen, Monash University, Australia

Gretchen Coombs, Monash University, Australia  
Eden Potter, Monash University, Australia  
Olivia Hamilton, RMIT University, Australia  
Cate O’Kane, Alfred Health, Australia  
<https://doi.org/10.21606/iasdr.2023.541>

**Co-designing with children with cerebral palsy: context and co-design principles**

Ganna Borzenkova, Manchester Metropolitan University, UK  
Jingshu Tang, Manchester Metropolitan University, UK  
Kristina Niedderer, Manchester Metropolitan University, United Kingdom  
<https://doi.org/10.21606/iasdr.2023.614>

**Cocreate: a co-design toolkit to design with and for adolescents together**

Claire Vos, Eindhoven University of Technology, The Netherlands  
Lu Yuan, Eindhoven University of Technology, The Netherlands  
<https://doi.org/10.21606/iasdr.2023.729>

**Combining Evaluation Grid Method to investigate the attractions of traditional crafts in Taiwan**

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<https://doi.org/10.21606/iasdr.2023.445>

**Cross-device system design based on stylized 3D map for intangible cultural heritage in Yunnan of China**

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<https://doi.org/10.21606/iasdr.2023.724>

**Design for expanding interaction and cognitive enhancement in virtual reality**

Youngil Cho, Hokkaido University of Science, Japan  
<https://doi.org/10.21606/iasdr.2023.866>

**Design intervention to aid young Indians in identifying triggers of generalised anxiety disorder (GAD)**

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<https://doi.org/10.21606/iasdr.2023.299>

**Designer-researcher’s positionality; materialities matter**

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<https://doi.org/10.21606/iasdr.2023.732>

**Designing adaptable consumption: a new practice to foster food system transitions**

Hannah Goss, Delft University of Technology, The Netherlands  
Nynke Tromp, Delft University of Technology, The Netherlands  
Rick Schifferstein, Delft University of Technology, The Netherlands  
<https://doi.org/10.21606/iasdr.2023.678>

**Designing effective interventions to encourage older adults proactively participate in physical activity and promote sustainable behaviour change**

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<https://doi.org/10.21606/iasdr.2023.739>

**Developing future kitchen for older adults: a model and participatory design approach based on literature review and ethics framework**

Zhidiankui Xu, School of Design, Jiangnan University, China  
Hua Dong, Brunel Design School, Brunel University London, UK  
<https://doi.org/10.21606/iasdr.2023.798>

**Development of “Amamizu Drink” as a Tool for Awareness regarding Rainwater conservation, and Investigation of the Effectiveness of Different Label Designs**

Sho Kondo, Fukui University of Technology, Japan  
Toshihiro Kasai, Fukui University of Technology, Japan  
Jun Mitera, Fukui University of Technology, Japan  
<https://doi.org/10.21606/iasdr.2023.655>

**Development of a “Facial Rock-Paper-Scissors” Program for Rehabilitation of Swallowing and Cognitive Functions that Has Psychological Effects**

Kiyomi Yoshioka, Meisei University, Japan  
<https://doi.org/10.21606/iasdr.2023.251>

**Development of an interactive teaching tool for woodworking course on components arrangement and sawing techniques using Augmented Reality technology**

Chia Lin Yang, National Cheng Kung University, Taiwan  
Chien-Hsu Chen, National Cheng Kung University, Taiwan  
<https://doi.org/10.21606/iasdr.2023.853>

**Digital cultural heritage conservation: sampling stilt houses in Tai O Village**

Daniel Elkin, The Hong Kong Polytechnic University, Hong Kong  
Chi-Yuen Leung, The Hong Kong Polytechnic University, Hong Kong  
Norah Xiaolu Wang, The Hong Kong Polytechnic University, Hong Kong  
Wai Yeung Yan, The Hong Kong Polytechnic University, Hong Kong  
<https://doi.org/10.21606/iasdr.2023.212>

**Digitalized intangible cultural heritage preservation – reinventing the design practice of Hong Kong men’s cheongsam**

Haze Ng, The Hong Kong Polytechnic University, Hong Kong  
<https://doi.org/10.21606/iasdr.2023.800>

**Educating the mindful designer: Exploring Mindfulness Practices in Design Education**

Alberto Iberbuden, Anhalt University of Applied Sciences, Germany  
<https://doi.org/10.21606/iasdr.2023.764>

**Enhancing elderly with Communication impairments: Exploring visual and voice communication tools**

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Hong-Chun Shi, Faculty of Innovation and Design, City University of Macau  
<https://doi.org/10.21606/iasdr.2023.436>

**Envisioning sustainable smartphone alternatives: a plurishop approach**

Ines Petra Junge, University of Oslo, Norway  
Alma Leora Culén, University of Oslo, Norway  
<https://doi.org/10.21606/iasdr.2023.799>

**Expanding the boundaries of service design to assist re-design the short-term strategy for sustainable development**

Tong Liu, Tsinghua University, China  
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<https://doi.org/10.21606/iasdr.2023.873>

**Exploring the Influence of Aesthetic interaction using Personal Information Devices at Work**

Hyunwook Nam, Ulsan National Institute of Science and Technology, South Korea  
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**Exploring the use of a digital twin in theatre stage design**

Emma Kirjavainen, University of Lapland, Finland  
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Juri Etto, University of Lapland, Finland  
Ashley Colley, University of Lapland, Finland  
<https://doi.org/10.21606/iasdr.2023.806>

**Fears, Desires and Visions of Prague Residents: Transition to Age-Friendly Community Centres in 2050**

Lijun Chen, Czech Technical University in Prague, Czech Republic  
<https://doi.org/10.21606/iasdr.2023.700>

**Fostering collaboration between start-ups and students for mutually beneficial inspiring learning**

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Anna Meroni, Politecnico di Milano, Italy  
<https://doi.org/10.21606/iasdr.2023.829>

**From Bodies in Technology to Digital Subjectivity: Research on the Identity Construction of Digital Humans**

Yixuan Tai, Tongji University, China  
Jie Wu, Tongji University, China  
<https://doi.org/10.21606/iasdr.2023.776>

**From the mothers' movement to cradlr: an interaction design for refugee children**

Jing Zhou, Monmouth University, USA  
<https://doi.org/10.21606/iasdr.2023.839>

**Generative AI in creative design processes: a dive into possible cognitive biases**

Andreea-Roxana Popescu, The Hague University of Applied Sciences, The Netherlands  
Alice Schut, The Hague University of Applied Sciences, The Netherlands  
<https://doi.org/10.21606/iasdr.2023.784>

**How the GenAI sex education advisor became feasible: exploring the future design principles for child sex education in the community**

Xiaoling Lin, Hunan University, China  
Shuai Sun, Hunan University, China  
Xuan He, Hunan University, China  
Ai Zhang, Hunan University, China  
<https://doi.org/10.21606/iasdr.2023.791>

**How to adopt Design Thinking within organizations? Mapping facilitators to activate an organisational transformation path**

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<https://doi.org/10.21606/iasdr.2023.683>

**Ideal model and everyday life: interior decoration of the modern home in early twentieth-century Shanghai**

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<https://doi.org/10.21606/iasdr.2023.638>

**(im)Mobile gendered identities: The relationship between mobility and identity**

Krity Gera, Royal College of Art, UK  
<https://doi.org/10.21606/iasdr.2023.741>

**Improving the patient-doctor relationship to fight antimicrobial resistance through data literacy promoted by a women-centred participatory practice**

Ginevra Terenghi, Brunel University London, UK  
<https://doi.org/10.21606/iasdr.2023.291>

**In-house designers to break out public sector auditing in a manageable way**

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<https://doi.org/10.21606/iasdr.2023.769>

**Influence of lighting colour on visual evaluation of landscape paintings - Focus on some Claude Monet's artworks**

Shino Okuda, Doshisha Women's College of Liberal Arts, Japan  
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Manuel Melgosa, University of Granada, Spain  
<https://doi.org/10.21606/iasdr.2023.625>

**INTO: a remote communication tool featuring body language and the fusion of the real and the virtual**

Chia-Yu Liu, National Cheng Kung University, Taiwan  
ChunWei-Sean Su, Logitech Far East Ltd.  
Chien-Hsu Chen, National Cheng Kung University, Taiwan  
<https://doi.org/10.21606/iasdr.2023.626>

**Introducing hope in design for health and well-being**

Arefe Jasbi, Norwegian University of Science and Technology, Norway  
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<https://doi.org/10.21606/iasdr.2023.691>

**Investigating the Impact of Digital Fabrication on Architecture Design Practice through a Taxonomy**

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<https://doi.org/10.21606/iasdr.2023.790>

**Kirisense: making rigid materials bendable and functional**

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**Living the Life: Evidence-based design and evaluation of psychosocial interventions with people with dementia**

Kristina Niedderer, Manchester Metropolitan University, UK

Pui Ling Fung, Manchester Metropolitan University, UK

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**Looking for the true nature of academic research on design: a systematic review of 27 PhD theses**

Samuel Danzon-Chambaud, frog, part of Capgemini Invent, France

Rose Dumesny, frog, part of Capgemini Invent, France

<https://doi.org/10.21606/iasdr.2023.690>

**Measuring designers 'use of Midjourney on the Technology Acceptance Model**

Shuhan Shen, Shanghai Jiao Tong University, China

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**Ontological design approach for Alternative soil-human relations**

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<https://doi.org/10.21606/iasdr.2023.646>

**Optimizing user experience in online payments: the relationship between wait time and psychological uneasiness**

Haopeng Wu, Shibaura Institute of Technology, Japan

Ryeongna Cheon, Shibaura Institute of Technology, Japan

Wonseok Yang, Shibaura Institute of Technology, Japan

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**Particling Night: The Design of an Emerging Media Artwork as a Tool for Reflection on Superficiality of Social Media**

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**Perception change for circular economy through the practice of plastic recycling system with local residents**

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<https://doi.org/10.21606/iasdr.2023.863>

**Preliminary study of participatory and nature-inclusive design approaches**

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<https://doi.org/10.21606/iasdr.2023.718>

**Product design for cultural digitization - the example of salt-making portrait bricks from the Han Dynasty in China**

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<https://doi.org/10.21606/iasdr.2023.753>

**Promoting Sustainable Practice through Video-Based Social Media: an Exploration of Food-Oriented R-Strategies for Domestic Consumption**

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<https://doi.org/10.21606/iasdr.2023.720>

**Sonic memories: towards a participatory memory archive**

Pinar Yelmi, University of Leeds, UK

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**Sparking Creative prowess through a peculiar design challenge: a mocktail design charrette**

Sébastien Proulx, The Ohio State University, USA

William Nickley, The Ohio State University, USA

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**Stairway to Heaven: Designing for an Embodied Experience with Satellite Data**

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Anders Sundnes Løvlie, IT University of Copenhagen, Denmark

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**Taller than the trees: Growing a biophilic sensibility in a photo-graphic design studio course**

Peter Kwok Chan, The Ohio State University, USA

Ben McCorkle, The Ohio State University, USA

Noor Danielle Murteza, The Ohio State University, USA

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**The agency of graphic design towards promoting collective awareness of heritage inscriptions: A study on the erosion of Palestinian traditional iconography**

Belal Herbawi, University of Porto, Portugal

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**The designer's role in fashion system transitions: A critical review of transition design**

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**The existence and potential of woven banana stalks furniture in Trangsan village Indonesia**

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**The Language of Tables: Pneumatic Interface Design for physical-digital experiences**

Hanjie Yu, Tsinghua University, China

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**The lonely island: A design game to explore loneliness through co-creation**

Mads Bärenholdt, University of Southern Denmark, Denmark

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**The role of service design in designing and developing AI applications: Scoping review**

Yi En Isabel Tan, National University of Singapore, Singapore

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**The use of collaborative media in societal crises – towards a conceptual framework**

Mari Karhu, University of Lapland, Finland

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**The value and impact of stakeholder networks in exploring the complexity of government public services: A case study of Stray Dog Population Management**

Mei-Ju Chou, National Taiwan University of Science and Technology, Taiwan

Hsien-Hui Tang, National Taiwan University of Science and Technology, Taiwan

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**Towards a framework for innovation in craft-design practices**

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**Tracking Acts of Kindness through Comics: an Experimental Study**

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Yvette Shen, The Ohio State University, USA

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**Unpacking Dominant Design: A critical analysis of power and dominant discourse in Design**

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Chiara Del Gaudio, Manchester Metropolitan University, UK

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**User-Centred Study on Over-the-Counter Medicine Purchasing System Design from the Perspectives of Consumers and Experts in Japan: A Codesign Case**

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**Utilizing ambiguous visual stimuli for creative expression in collaborative teamwork**

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**We've never learned to talk about it': Considerations for design researchers to address intimacy and sexuality**

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**Weighting key driving forces of consumers choosing coffee chains in different scenarios**

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**What is the Effect of a Slant Shape in the Design of a UGV Delivery Robot? - UGV Robots and the Effect of Shape on the Perceived Safety**

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**A time-based approach for the social spatialization strategies in retail design**

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**Changing People's behaviour toward Littering in the Egyptian Community**

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**Co-Creating Narratives of Usefulness**

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**Co-Designing with Immigrant Women to imagine an Equitable Mental Health Service Ecosystem**

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<https://doi.org/10.21606/iasdr.2023.796>

**Design mediating printing technology and food culture: a small paper box linking "eating" and "mobility"**

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**Designing Healing from Eating Disorders: Systemic and imaginative approaches**

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**Digital patient experience: understanding, improvement, and evaluation from a human-centered design perspective**

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**Digitally fabricated Design Interventions for ALS/MND**

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**From E-waste to Jewellery: creating emotionally durable jewellery with the metal recovered from electronic waste**

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**Immersive Reading in VR**

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**Investigating strategies for delivering change through the practice of co-design with communities in the Northern Ireland context**

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**Investigating the adoption of autonomous processes in the context of organizations**

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**Longing for: Exploring intimacy and sexual expression in long-term care through Participatory Design approaches**

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**Mindfulness for designers. An integration of mindfulness, design education and reflective practices**

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**Participatory design for craft sustainability in rural areas: a multi-sited approach**

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**Personhood: defined, collected, and integrated**

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**Queer cities. Designing inclusive public spaces through participative and social innovative actions and practices**

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**Service Design to promote a systemic and dynamic perspective of well-being in dementia care**

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**Snapping (identities) through design forward**

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**Responsible tourism experiences: Designing solutions to improve communities-based tourism services from global to local scale**

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**Technological mediation analysis on Constructive Design Research: A case study of trust**

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**The body gets the notion: performative design practice for human computer integration to encourage innovation in the domains of health and well-being**

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**Tools for opening the lonely black box and changing young adults' perspectives of their loneliness**

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**Utilizing patent data for enhanced design creativity and reduced fixation in product design**

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