Digital futures/Hybrid reality

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Introduction

'The danger isn't that AI destroys us.
It's that it drives us insane'

— Jaron Lanier (Hattenstone, 2023)

While our preparations were running, generative AI systems such as ChatGPT and Dall-E suddenly headlined and underlined a new era of fear and hope. As the quote above of a prevalent virtual reality pioneer underlines, this requires a critical mindset with a passion for innovation. The Metaverse, 3D printing, artificial intelligence, and similar phenomena are re-shaping the role of the designer: a novel skillset and attitude is required to convert these digital capabilities into valuable tools and methods as once eluded by Engelbart (1962) and Reikimoto (2014). This incorporates defining types of cyber-physical or augmented craftmanship, not forgetting about sustainability, social inclusion, and aesthetics. Furthermore, how can we ensure that the human (both collective and individual) stays in the driver seat, while political and economic agendas complicate a true human-centered design in times of industry 4.0, algorithms, distributed data, fuzzy intellectual property, and so forth.

For this track we received over 167 proposals that, after a double-blind review, resulted in 37 high-quality papers and 11 posters. These contributions go beyond the technical, to envision the capabilities of software/hardware as a meta-medium, with specific applications for the creative industry, and to frame the educational/ethical challenges in case studies and reflections.

The section ***new crafts and craftspeople***, revolves around the intersection of craft and digital immersive technologies, exploring hybrid workflows and production processes for creating augmented textile artefacts and fashion-tech products. The papers discuss learning experiences and experiments in digital fabrication, as well as the design of hybrid workflows and business models to engage with Industry 4.0 technologies in craft production.

Research through design in the cyber-physical era deals addresses the integration of technology with music-making and human-computer interaction in designerly ways, exploring physical interactions and sensory experiences in the design of digital products, and rethinking traditional paradigms of disability and the body in relation to technology.

The section entitled ***redefining the role of designers***, explores the intersection of computational thinking, design, and fabrication in creating augmented and accessible museums. The papers cover a range of topics such as co-creating 3D materials with synesthetic AI, speculating futures in an age of nostalgia, and the use of cabinets of curiosities to explore collections and tokens in the postcolonial context. The papers highlight the potential for technology to enhance the museum experience and promote inclusivity, while also addressing the challenges and complexities of curating collections and representing diverse histories.

The section ***usability and performance of innovations*** addresses the importance of evaluating and asessing new designs, with an increasing role of technology in enhancing learning, work, and shopping experiences.

Design for and with extended reality focuses on the intersection of immersive technologies, creativity, and materiality. This includes applications such as virtual reality and the metaverse, for creative expression and communication. The papers explore how these technologies can be used to assist in ceramic creation, stimulate storytelling and communication competencies, and introduce the concept of material experience in virtual environments. Additionally, the theme also touches upon the purpose of furniture in the metaverse.

The section ***design for and with digital fabrication*** provides new insights towards design methods and techniques in the field of additive manufacturing (AM). The papers also highlight the importance of knowledge transfer and collaboration in advancing the commercialisation of AM. Additionally, there is a focus on the use of new materials and technologies in the design process, such as electronic textiles and circular design materials. Finally, the papers address the impact of automation and technology on traditional craft practices.

The ***digital on an urban scale*** covers exploration and design of urban spaces in the context of technological advancements, particularly in the realm of smart cities and extended reality. They examine the relationship between technology and urban environments, exploring concepts such as data activation, engagement, and the use of 5G technology to create smart product-service systems. The papers also address the

need to rethink traditional notions of urban planning and design, to create more flexible and adaptable urban spaces that can respond to the changing needs of communities.

The section ***technology-driven design education*** covers new insights in the integration of technology into design education, specifically AI and virtual reality, as well as the need for collaboration and interaction in the design process. The papers also touch on the evolving role of designers in a technology-driven world.

Finally, the common themes of the section ***digital fashion*** are sustainable fashion, the use of digital technology in fashion, and the evolution of fashion into the virtual space of the metaverse. The papers explore the potential of digital twins, media technologies, NFTs, and direct-to-avatar retail experiences to improve sustainability, design knowledge, and customer engagement in fashion. They also discuss the challenges and opportunities of deconstructing materiality in fashion and creating new forms of value and expression in the metaverse.

Apart from these academic papers, we hosted workshops, posters, and this time also a curated collection of lecture/performances featuring cyber-physical artworks. We Thank the authors and reviewers for their hard work and hope that this set offers a new chapter to Cumulus, to provide a guide to move from traditional design and heritage to critical integration and convergence.

References

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