Proceedings of the International Conference on Creative\Media/Technologies (IConCMT) 2023 and 2024

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Abstract

This volume brings together selected papers from the 5th and 6th International Conference on Creative\Media/Technologies (IConCMT), showcasing interdisciplinary research at the intersection of digital media, design, and society. The contributions are divided into four thematic areas: AI assistance, data-driven storytelling, infographics, and mediated aesthetics, and explore how technology, narrative, and visualisation can inform, engage, and transform the society. Together, they highlight the potential of creative media technologies to address complex societal challenges through human-centered, ethical, and innovative approaches.

Keywords

Proceedings, IConCMT, Creative Media Technologies, Applied Sciences

1. Introduction

The **International Conference on Creative\Media/Technologies (IConCMT)** is an annual event organised by the Institute of Creative\Media/Technologies at the St. Pölten University of Applied Sciences (STPUAS). Its primary objective is to foster interdisciplinary dialogue and collaboration within the broad spectrum of digital media, exploring the intersection of technological possibilities, creative design, and sociocultural frameworks.

The 5th **IConCMT** was held from 28 to 30 November 2023, and the 6th **IConCMT** took place on the 27 to 28 November 2024 – both conferences were organised on-site at the STPUAS. For these editions of the conference, several areas had been identified as focal points, emphasising the emerging challenges within the realm of media and digital technologies. Both conferences featured a wide range of interdisciplinary contents, including participatory culture, cultural heritage, open data, hybrid public spaces, the intersection of visualisation, AI, media production, storytelling, climate change communication, and immersive education paradigms.

Selected papers originating from these conferences, reflecting their wide range of interdisciplinary content, are collected within these proceedings. They are organised into four distinct sections: media history, culture, and design; data visualisation and storytelling; the use of infographics for data exploration; and AI assistance, encompassing the diverse research and practice areas presented across the events.

Additional details about the conferences, programmes, photo and video archives can be found on the conference's website at https://iconcmt.fhstp.ac.at/.

2. Content Overview

The papers are divided into four thematic sections: AI Assistance, Data-Driven Storytelling, Infographics, and Mediated Aesthetics. The papers highlight how researchers and practitioners are using computational tools, narrative forms, and multimodal representations to address pressing challenges of digitalised society and expand the boundaries of knowledge across domains.

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2.1. AI Assistance: On Language, Meaning, and Human Oversight

The papers in this stream cover the evolving landscape of Human-AI interaction. They address the dual challenge of advancing AI capabilities while ensuring that systems remain robust, safe, and ethically grounded.

The paper by **Bissinger et al.** is rich in both technical and ethical aspects. The authors address inconsistencies in Emotion AI by proposing a human-centered approach for video conferencing that gives users control over their detected emotional data. The paper also suggests alternative, non-invasive visualisation techniques like cartoon avatars and environmental metaphors. A key strength lies in how the authors connect the technical development of the SitAdapt system with real-world use cases, demonstrating practical applicability. Furthermore, the paper discusses examples of surveillance and manipulation, providing strong empirical grounding for critical discourse on AI ethics, data protection, and informed consent. Its alignment with current regulatory discussions, particularly in the context of the EU AI Act, makes it especially timely and policy-relevant.

Feilacher et al. propose a robust, user-centered dialogue structure for AI voice assistants in emergency situations, demonstrating its effectiveness for older adults through pilot studies. The project introduces structures that ensure consistent, traceable, and loop-free dialogue execution. Especially noteworthy is the external control mechanism that allows the voice assistant to autonomously restart interrupted conversations — a critical feature in emergency scenarios where conventional Alexa skills typically fail. This implementation illustrates how rigorous system architecture can support vulnerable user groups in high-stakes settings.

Kramml et al. evaluate leading AI chatbots for health education. Despite the promising diagnostic capabilities of AI chatbots like ChatGPT, Gemini, and Llama2, their deployment in healthcare demands careful scrutiny due to persistent concerns over data security, accuracy, misinformation, and the high stakes of potential errors in medical contexts. The study finds that while some models provide accurate responses, significant concerns about data privacy, factual reliability, and AI hallucinations remain. The paper combines a comprehensive technical evaluation with a critical discussion of ethical risks and regulatory gaps, emphasizing the need for transparent design and medical oversight in AI systems.

Vianna, in his conceptual review, examines recent advancements in generative visual artificial intelligence through the analytical frameworks introduced by philosophers of the linguistic turn. He argues that while large language models and image generators can mimic language use, they still lack true semantic grounding—particularly in non-literal or context-dependent meaning. The implication is that language remains inherently unbounded, resisting full formalisation — a cautionary insight for any system attempting comprehensive language-world alignment.

Taken together, these papers offer a multifaceted view of interaction with AI Assistants across emotional, linguistic, visual, and conversational modalities. While Bissinger et al. and Feilacher et al. foreground user safety and control in system architecture, Kramml et al. and Vianna emphasise the epistemic and ethical boundaries of current AI capabilities. Collectively, the contributions underscore AI's transformative potential while highlighting the ongoing need for human-centric design, critical reflection, and continuous regulatory and ethical oversight.

2.2. Data-driven Storytelling: Interactive and Co-created Narratives

The papers in this section examine the evolving role of storytelling as a method for meaningful engagement, communication, and transformation across diverse domains. The four works show that storytelling is not only a content layer, but also an interface between stakeholders and systems, users and data, memory and future possibility. Each paper demonstrates how domain-specific narratives can be constructed not only to inform or entertain, but to support behavioral insight, organisational awareness, and cultural accessibility.

Lena Baumgartner and her team introduce their innovative serious game approach to assist youth at risk of drug addiction. Unlike traditional top-down prevention tools, this project engaged *at-risk youth* directly in co-design workshops to develop characters, locations, and storylines. The

game strengthens core competencies needed by youth in a number of workshops. The project team developed its game with citizen scientist and addiction experts. The game reflects a harm minimisation paradigm rather than an abstinence-only approach. This aligns better with real-life attitudes and experiences of the target group (e.g., use of MDMA, cannabis, alcohol). The game presents realistic scenarios and practical safe-use tips. The prototype yielded promising evaluation results.

Böck et al. present their work on a visualisation of Austrian medical services emergency technicians. Domain experts noted that early signs of potential dropout are often overlooked in annual meetings, even though preventive interventions are possible. Based on their user input, the developed dashboard provides the planning and overview tool needed to address the need for a structured overview of tasks, availability, and resources that is needed on the organisational level. What is particularly interesting is that the authors implemented a multi-view dashboard using Tableau. The data engineering behind the dashboard included parsing 10 years of shift data, which allowed domain experts not only to confirm existing assumptions but also to gain new insights.

Kasra Seirafi's paper explores the challenges of conveying the significant portions of museum collections that are not accessible to the public due to spatial constraints. The paper proposes digital strategies to unlock these hidden assets, enabling broader public access and enhancing educational use. Seirafi presents three use cases and focuses on the cooperation of cultural data, digital technology and cultural institutions and their archives. In each, Fluxguide employs methods of data visualisation and visual storytelling to create explorative cultural experiences to make cultural data more accessible.

Rosa von Suess et al. present a study on Interactive Fiction in cinematic Virtual Reality (IFcVR). Focusing on presence and models of interaction, the study evaluates the subjective immersion of three different immersive cinematic VR Experiences. The study clearly outlines the potential of interactive narrations and provides groundwork for future Cinematic VR Production. The paper analyses 74 cinematic VR projects, and is especially interesting due to its mixed-methods methodology that combines measuring of biometric data, standardised questionnaires and qualitative interviews. The biometric data, especially the peaks, were matched to time points in the narrative, using the previously analysed story structure.

2.3. Infographics and Interactive Visualisations

The section Infographics presents four contributions that explore the design and application of infographics, interactive visualisations, and sonification across diverse domains. The selected works demonstrate how data can be transformed into accessible and meaningful representations through interdisciplinary approaches, with implications for healthcare, social diagnostics, geoinformatics, and astronomy education.

Böck et al. introduce an interactive dashboard for the analysis of hospital discharge data in Austria. Developed using Tableau and structured according to the 5 Design Sheet Methodology, the dashboard integrates bump charts, choropleth maps, and horizon plots to visualise temporal, spatial, and categorical trends. The tool supports domain experts in identifying regional disparities, planning educational scenarios, and conducting data-driven public health analyses.

Fujimoto et al. propose a novel framework for analysing sonification mappings by applying translation theory—specifically, Vinay and Darbelnet's seven translation strategies. The authors conceptualise sonification as a form of intersemiotic translation and evaluate its effectiveness in astronomy education for blind and low-vision (BLV) individuals. Through listening experiments using the *SoundObservation* tool, they demonstrate how different mapping strategies influence the interpretability of stellar data. Their findings contribute to the development of reproducible and semantically coherent sonification methodologies.

In their paper, **Rind et al.** present a redesign of the "Angehörigendialog," a socio-diagnostic tool used in counselling sessions with family caregivers of individuals with dementia. The authors detail the development of a web-based questionnaire and a set of bespoke infographics designed to support

resource-oriented reflection and communication. The infographics employ intuitive metaphors—such as blooming flowers and hot-air balloons—to visualise caregiver burdens and strengths. The work exemplifies a human-centred design process at the intersection of personal and collaborative data visualisation.

Weibel presents "Mont," a lightweight augmented reality (AR) web application for mountain peak recognition in Switzerland. Implemented entirely in vanilla JavaScript and based on open government geodata, the application overlays peak names, altitudes, and distances onto a live camera feed. Designed for mobile use without external libraries or frameworks, "Mont" exemplifies the potential of open data and client-side web technologies for geospatial education and outdoor exploration.

Collectively, these contributions highlight the versatility of visual and auditory representations in enhancing data accessibility, interpretability, and user engagement across disciplinary boundaries.

2.4. Mediated Aesthetics: Style, Sound, and Signations

This section features four papers that explore diverse approaches in media and cultural studies, each offering innovative methodologies and insights. The authors combine archival, ethnographic, and artistic research techniques to study creative practices, and cultural shifts from the historical, aesthetic, and social perspectives.

The papers by Kristina Schmiedl and Felix Keis have been among the winners of the Different Brilliant award that honours outstanding Master's and Bachelor's theses that exemplify best practices in applied and artistic research projects in media, design, and media production.

Felix Keis' paper looks into graffiti writing in urban spaces, extending existing research that focused on political, sociocultural, or communicative dimensions, by linking it with the field of typography. This interdisciplinary approach is particularly interesting and represents a new contribution to graffiti studies, also by combining multiple methods: an analysis of police graffiti database, a survey, and expert interviews with graffiti artists, researchers, designers, and a podcaster.

The study provides insights into the intersection of stylewriting and typography, revealing its creative potential beyond subcultural contexts. A key concept is the understanding of the word as a visually cohesive unit in type design. The research also points to further directions of research, such as the role of colour, comparisons with other display typefaces, and practical experiments in font development using graffiti-inspired techniques. Rather than framing stylewriting as a final form, the study positions it as a rich source of inspiration for typographic innovation.

The doctoral project by **Isabel Pina** explores the work of Aurélio da Paz dos Reis, focusing on his contributions to stereoscopy and his impact on visual culture in Portugal through photography and documentary film. Framed within the context of 19th- and early 20th-century media archaeology, and grounded in artistic research methods, the study investigates a photographic archive containing 7,294 stereoscopic images. It also experiments with documentary that draws on his most iconic photographs, using such methods as historical reconstruction and multisensory engagement. The project aims both to deepen the understanding of Paz dos Reis's legacy and to make his work more accessible to contemporary audiences. The methodological approach that combines historical media research with artistic expression is an intriguing aspect, as it has the potential to bridge the gap between past and present visual culture.

The paper by **Schmiedl** explores the evolution of animated title sequences, so-called *signations*, produced by the Austrian Public Service Broadcaster (ORF), focusing on their technological development from the beginning of Austrian television until 1989. Combining historical research, case studies, and interviews with former ORF graphics department members, the study traces the transition from analogue techniques to early digital tools like the Quantel Paintbox, Harry editing system, and the 3D animation software Alias PowerAnimator. The ORF's adoption of new technologies often preceded formal training, requiring experimentation and self-education by staff.

The paper highlights how ORF's graphics department contributed to Austrian television aesthetics through continuous adaptation and innovation. By documenting the signations

transformation, the paper offers a valuable contribution to animation research, fills a gap in the history of film production, and sets a foundation for future studies on the digital development of television graphics in Austria.

Jana Stadlbauer's doctoral project explores listening to music through the anthropology of the senses and sensory ethnography. The paper focuses on private music perception within the hi-fi scene. The research contributes to cultural studies by addressing the sense of hearing and sensory perception, following the shift towards the sensual that has been observed in musicology and sociology. The subject of the research is particularly challenging due to the immaterial nature of sound and the emotional reactions it provokes. Methodologically, the paper is especially interesting as the author addresses these challenges by employing autoethnography and observing her own perceptions, learning a new language to verbalise these particular sound experiences. This approach led to certain shifts in the work with research participants, as the author employed different techniques such as listening together or providing narrative support when asking participants about their memories and perceptions.