

Guest Editor's Introduction

HUMANIZATION OF DIGITAL TECHNOLOGIES

Dominik Siemon

LUT University

Department of Software Engineering
Finland

ORCID 0000-0002-2945-4167

Annika Wolff

LUT University

Department of Software Engineering
Finland

ORCID 0000-0002-6638-6677

Abstract: *This editorial introduces the special issue arising from the "11th International Conference on Communities and Technologies - Humanisation of Digital Technologies". It sets the stage for a series of papers that illustrate a shift from technology-centred to human-centred approaches in the development of digital technologies. The editorial highlights the central theme of the conference, emphasising the integration of human needs and values to enhance societal well-being and environmental sustainability. It outlines the overarching goals of humanising digital technologies, discusses the significance of each of the included papers in advancing these goals, and emphasises the importance of ethical considerations and user-centred design. This issue demonstrates practical approaches to embedding human values at the core of technological innovation, ensuring that digital technologies serve societal needs and support inclusive and sustainable development.*

Keywords: *humanisation, technological innovation, sustainable development.*

©2024 Dominik Siemon, Annika Wolff

DOI: <https://doi.org/10.14254/1795-6889.2024.20-2.0>



This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

Towards a More Human-Centered Digital Future

In today's digital age, the interface between humans and technology not only shapes our interactions with machines but also deeply influences our social structures and personal well-being (Ahmad et al., 2022; Murray et al., 2021). The 11th International Conference on Communities and Technologies (C&T 2023), themed "Humanization of Digital Technologies," invited participants to critically reassess this dynamic interaction. This theme advocates a shift from a technology-centred to a human-centred perspective, urging us to consider technology as embedded in the broader context of human needs, values and ecological considerations.

Central to this discourse, and reflected in the papers selected for this special issue, is the concept of human-centred design. This is a design philosophy that prioritises the human experience in the development of technology, with a focus on enhancing human well-being and capabilities rather than simply increasing technological functionality. By involving users directly in the design process, as advocated by Norman & Stappers (2015), technology becomes more than a tool, but a natural extension of human activity that resonates deeply with individual and communal needs. The papers in this special issue embody this approach, each exploring different facets of how technologies can be more thoughtfully integrated into our lives. Complementing this is the concept of post-digitalism, which reconciles the role of digital technologies in everyday life. As outlined by Cramer (2015), this perspective acknowledges that the disruption caused by digital technologies has already occurred, and shifts the focus from technology as disruptor to technology as integrator within society. This perspective encourages technologies that adapt to and enhance human practices, rather than overshadowing or replacing them (Cramer, 2015; Jandrić et al., 2018). Building on these foundations, the integration of artificial intelligence (AI) into this framework represents a considerable step forward in the humanisation of digital technologies (Siemon, 2022), as collaboration between humans and AI is an example of this potential transformation. For example, Dignum (2019) highlights the need for AI systems that respect human autonomy and promote societal values. Such systems should empower humans rather than replace them, creating a symbiotic relationship (Gerber et al., 2020) in which human intuition and emotional intelligence synergize with AI's computational capabilities to address complex challenges (Dellermann et al., 2019; Gerber et al., 2020).

In addition, the humanisation of digital technologies involves a sophisticated interpretation of data, in which human insights play a critical role (Wolff et al., 2016). This process goes beyond mere data analysis; it involves an ethical and contextual assessment of how data impacts real-world scenarios. This is particularly important in areas such as healthcare, urban planning and environmental protection, where the impact of technological decisions can be profound. The ongoing interplay between these concepts - human-centred design, post-digitalism, AI collaboration and ethical data use - highlights the complexity of humanising digital technology. Research in this area must therefore navigate these different relationships and develop technologies that are not only innovative, but also deeply integrated with human and ecological values. In this way, researchers and technologists can ensure that advances in ICT not only solve technical problems, but also enhance societal well-being, promote inclusivity and foster sustainable relationships with our environment.

Humanising digital technologies means recalibrating our approach to innovation, putting human and environmental well-being at the heart of technological development. Through

thoughtful research and deliberate design, we can create technologies that truly serve society, improving the human condition while respecting the delicate balance of our world.

Papers of this Special Issue

This special issue, arising from the 11th International Conference on Communities and Technologies - Humanisation of Digital Technologies, presents a collection of extended papers that push the boundaries of how digital technologies can be centred on human needs and societal values. These papers, while diverse in their focus, underscore the importance to design and use technology in ways that enhance human interaction, societal engagement, and ethical considerations. Each paper not only contributes unique insights into the application of technology, but also aligns with the overarching theme of humanising digital technologies.

“Self-Sovereign Identity, Data Control, and User Perceptions” by Martin et al. explores the limitations and potential of Self-Sovereign Identity (SSI) technology. Contrary to claims that SSI offers users greater control over their data, the findings suggest a more nuanced reality, particularly in the absence of supportive regulatory frameworks such as the GDPR. This paper critically addresses the balance between user autonomy in data management and the institutional power dynamics that influence this autonomy, highlighting a core aspect of humanising technology: the need for user-centred privacy and control in digital identity systems.

“Using Empathic Design Strategically to Provide Citizen-Friendly Services” by Hyökki et al. describes the application of empathic design principles in Finnish cities to better meet the diverse needs of their citizens. By placing the human experience of city residents at the forefront, this study shows how city governments can move from being service providers to facilitators of inclusive community spaces. The strategic use of design thinking in public services reflects a commitment to creating responsive and adaptive urban environments that prioritise the well-being of citizens.

“The Role of Digital Technologies in Urban Co-Creation Practices” by Slingerland et al. explores how digital tools can facilitate participatory design and co-creation in urban planning. The paper highlights the potential of digital technologies to bring together diverse community voices in the design of urban spaces that are equitable and responsive to local needs. By analysing European case studies, it demonstrates the transformative power of digital tools in promoting collaborative urban planning, thereby enhancing community engagement and social inclusion.

“Designing Shareish, an Open-Source, Map-Based, Web Platform to Facilitate Diverse Solidarity Practices” by Guillems et al., presents a platform inspired by the gift economy to support community solidarity. The open-source nature of Shareish, and its focus on localising resources and commitments, demonstrates how digital platforms can foster community autonomy and empower local interactions. This approach to technology design prioritises accessibility, community ownership and the facilitation of grassroots movements, closely aligning with the theme of humanisation.

“Artificial Intelligence and Machine Learning Combating Illegal Financial Operations” by Leonov et al. illustrates the critical role of AI in improving the detection and prevention of financial crime. Through the use of advanced analytics, this paper discusses the capabilities

and challenges of AI in a regulatory environment, highlighting the importance of ethical considerations and transparency in the use of AI. This is in line with the theme of ensuring that technological advances in AI contribute positively to societal security and justice.

CONCLUSIONS

The insights gained of the 11th International Conference on Communities and Technologies (C&T 2023) and the papers in this special issue highlight the need for a shift in the way digital technologies are conceived and implemented. This movement towards the humanisation of digital technologies is a broad challenge that requires a re-evaluation of our technological priorities and strategies, with the aim of placing human and ecological well-being at the forefront of technological progress. The papers in this issue illustrate different implementations of human-centred design principles in different contexts - from the study of self-sovereign identities to the application of empathic design in urban planning. Each article highlights the importance of prioritising human experiences and needs in technology development, and offers strategies for how digital tools can enhance community empowerment, protect individual rights and promote inclusivity.

Discussions on AI, particularly in regulatory contexts such as the prevention of financial crime, highlight the need for a balanced approach to technological innovation that incorporates rigorous ethical considerations. These discussions point to the importance of creating AI systems that are transparent, accountable and aligned with societal values, thereby mitigating potential risks associated with the use of AI (Arrieta et al., 2020; Brendel et al., 2021; Dignum, 2019). Humanising digital technologies requires a multidisciplinary approach, combining insights from design, ethics and technology development. It requires a commitment to continuous research and collaboration across disciplines to ensure that technological advances make a positive contribution to society. This approach should include rigorous evaluation mechanisms to assess the impact of technologies on human and environmental health.

In conclusion, the quest to humanise technology is an invitation to innovate responsibly. It requires researchers, practitioners and policy makers to engage in sustained dialogue and collaboration to develop technologies that are not only effective, but also equitable and sensitive to the complex dynamics of human and ecological systems. The papers in this special issue contribute to this dialogue by offering fundamental perspectives and methodologies for advancing this critical field.

REFERENCES

- Ahmad, R., Siemon, D., Gnewuch, U., & Robra-Bissantz, S. (2022). Designing Personality-Adaptive Conversational Agents for Mental Health Care. *Information Systems Frontiers*, 24(3), 923-943.
- Arrieta, A. B., Díaz-Rodríguez, N., Del Ser, J., Bennetot, A., Tabik, S., Barbado, A., García, S., Gil-López, S., Molina, D., Benjamins, R., & others. (2020). Explainable Artificial Intelligence (XAI): Concepts, taxonomies, opportunities and challenges toward responsible AI. *Information Fusion*, 58, 82-115.
- Brendel, A. B., Mirbabaie, M., Lembcke, T.-B., & Hofeditz, L. (2021). Ethical Management of Artificial Intelligence. *Sustainability*, 13(4), 1974

- Cramer, F. (2015). What is 'Post-digital'? In *Postdigital aesthetics: Art, computation and design* (pp. 12–26). Springer.
- Dellermann, D., Ebel, P., Söllner, M., & Leimeister, J. M. (2019). Hybrid intelligence. *Business & Information Systems Engineering*, 61(5), 1–7.
- Dignum, V. (2019). *Responsible artificial intelligence: How to develop and use AI in a responsible way* (Vol. 2156). Springer.
- Gerber, A., Derckx, P., Döppner, D. A., & Schoder, D. (2020). *Conceptualization of the Human-Machine Symbiosis – A Literature Review*.
- Jandrić, P., Knox, J., Besley, T., Ryberg, T., Suoranta, J., & Hayes, S. (2018). Postdigital science and education. In *Educational philosophy and theory*, 50(10), 893–899.
- Murray, A., Rhymer, J., & Sirmon, D. G. (2021). Humans and Technology: Forms of Conjoined Agency in Organizations. *Academy of Management Review*, 46(3), 552–571.
- Norman, D. A., & Stappers, P. J. (2015). DesignX: Complex Sociotechnical Systems. *She Ji: The Journal of Design, Economics, and Innovation*, 1(2), 83–106.
- Siemon, D. (2022). Elaborating Team Roles for Artificial Intelligence-based Teammates in Human-AI Collaboration. *Group Decision and Negotiation*, 31(5), 871–912.
- Wolff, A., Gooch, D., Montaner, J. J. C., Rashid, U., & Kortuem, G. (2016). Creating an understanding of data literacy for a data-driven society. *The Journal of Community Informatics*, 12(3), 9–26.

Authors' Note

Dominik Siemon
LUT University
Department of Software Engineering
Finland
dominik.siemon@lut.fi

Human Technology
ISSN 1795-6889
<https://ht.csr-pub.eu>