

# ACADEMIC MINDTREK

3rd – 6th October, 2023  
Paidia Living Lab of Play, Nokia Arena, Tampere

## Academic Mindtrek 2023 - Track Descriptions:

We are very pleased to announce that the **26th International Academic Mindtrek** conference will take place between the **3<sup>rd</sup> and 6<sup>th</sup> of October 2023**, in Tampere, Finland. The event will be hybrid, with high-quality video streaming from the on-site location in Paidia, Nokia Arena.

The conference welcomes proposals for **full papers, workshops, demonstrations and poster presentations** on a variety of topics (see tracks below) as well as a **Doctoral Consortium**.

## Academic Mindtrek 2023 welcomes submissions under the following tracks:

### 1. Gamification:

Chairs: Juho Hamari (Tampere University) and Benedikt Morschheuser (Friedrich-Alexander-Universität Erlangen-Nürnberg, FAU)

### 2. Fictional, Speculative and Critical Futures:

Chairs: Oğuz 'Oz' Buruk (Tampere University), Marie Louise Juul Søndergaard (The Oslo School of Architecture and Design), Ahmet Börütecene (Linköping University), and Jeffrey Bardzell (Penn State University).

### 3. Augmented Cities and Communities:

Chairs: Mattia Thibault (Tampere University), Anton Nijholt (Twente University), Valentina Nisi (Istituto Superior Técnico), and Johanna Ylipulli (Aalto University)

### 4. Metaverse:

Chairs: Nannan Xi (Tampere University), Flona Nah (City University of Hong Kong), Philipp A. Rauschnabel (Universität der Bundeswehr München), and Sylvia Xueni Pan (Goldsmiths, University of London)

### 5. Human-nature interaction:

Chairs: Ferran Altarriba (Tampere University), Velvet Spors (Tampere University), Katherine Isbister (University of California, Santa Cruz), and Pat Brundell (University of Nottingham)

### 6. Datafication for Good:

Chairs: Zampeta Legaki (Tampere University), Daniel Fernández Galeote (Tampere University), and Kostas Karpouzis (Panteion University of Social and Political Sciences)

### 7. Dark Side of Information Technology:

Chairs: J. Tuomas Harviainen (Tampere University), Henri Pirkkalainen (Tampere University) and Kristian A. Bjørkelo (University of Bergen)

# ACADEMIC MINDTREK

3rd – 6th October, 2023  
Paidia Living Lab of Play, Nokia Arena, Tampere

## **8. Robots and AI in Everyday Life:**

Chairs: Sumita Sharma (University of Oulu), Mohammad Obaid (Chalmers University of Technology), and Yixiao Wang (Singapore University of Technology and Design)

## **9. Technology in Education:**

Chairs: Muhterem Dindar (Tampere University) and Daniel Bodemer (University of Duisburg-Essen)

## **10. Accessibility and Inclusion in the Digital Society:**

Chairs: Markku Turunen (Tampere University), Vasiliki Mylonopoulou (University of Gothenburg) and Pauliina Baltzar (Tampere University).

For more details, please visit our [website](#).

# ACADEMIC MINDTREK

3rd – 6th October, 2023  
Paidia Living Lab of Play, Nokia Arena, Tampere

## Gamification

**Chairs:** Juho Hamari and Benedikt Morschheuser (Friedrich-Alexander-Universität Erlangen-Nürnberg, FAU)

**Description:** Gamification is considered a “process of transforming any activity, system, service, product, or organizational structure into one which affords positive experiences, skills, and practices similar to those afforded by games and is often referred to as the gameful experience” (Hamari, 2019). This is commonly, but optionally, applied with an intention to facilitate changes in human behaviors or stimulate cognitive processes. As the main inspirations of gamification are games and play, gamification is realized through the application of game design (Morschheuser et al., 2017).

Gamification has become an umbrella concept that, to varying degrees, includes and encompasses other related technological developments such as serious games, game-based learning, exergames & quantified-self, games with a purpose/human-based computation games, and persuasive technology.

Secondly, gamification also manifests in a gradual, albeit unintentional, cultural, organizational and societal transformation stemming from the increased pervasive engagement with games, gameful interactions, game communities and player practices. For example, recently we have witnessed the popular emergence of augmented reality games and virtual reality technologies that enable a more seamless integration of games into our physical reality. Moreover, the media ecosystem has also experienced a degree of ludic transformation: with user-generated content becoming an important competitor for large media corporations. This transformation has led to the development of several emerging phenomena such as the Youtube and modding cultures, esports, or the ‘metaverse’, that have penetrated the cultural membrane allowing games to seep into domains hitherto dominated by traditional media.

The topics of interest include, but are not limited to:

- **Users:** (e.g., engagement, experience, motivations, user/player types)
- **Education:** (e.g., Serious games, game-based learning, simulation games)
- **Media:** (e.g., eSports, streaming)
- **Commerce:** (e.g., Game business models, free-to-play, gamification as marketing, adoption)
- **Work:** (e.g., Organizational gamification, gameful work, games-with-a-purpose, playbour)
- **Technology:** (e.g., VR, AR, MR, gameful wearables, metaverse, and IoT)
- **Toys & playfulness:** (e.g., Digital puppetry, smart toys)
- **Health:** (e.g., Quantified-self, games for health, health benefits)
- **Theories/concepts/methods:** Contributions to science around gamification

*Hamari, J. (2019). Gamification. The Blackwell encyclopedia of sociology, 1-3.*

*Morschheuser, B., Hassan, L., Werder, K., & Hamari, J. (2018). How to design gamification? A method for engineering gamified software. Information and Software Technology, 95*

# ACADEMIC MINDTREK

3rd – 6th October, 2023  
Paidia Living Lab of Play, Nokia Arena, Tampere

## Fictional, Speculative and Critical Futures

**Chairs:** Oğuz 'Oz' Buruk (Tampere University), Marie Louise Juul Søndergaard (The Oslo School of Architecture and Design), Ahmet Börütecene (Linköping University), Jeffrey Bardzell (Penn State University).

**Description:** With recent rapid developments in human-computer interaction, we are now facing emerging technologies that will have major impacts on humanity, potentially dramatically altering our ways of living. Technologies that once were the domain of science fiction, such as brain-machine interfaces, body augmentations, mind upload, habituation of space and robotic companions, are now here, or on the immediate horizon. These emerging technologies promise exciting opportunities for humankind, but they come with many challenges and might lead to massive societal, cultural and individual paradigm shifts. Understanding the impacts of these emerging technologies is remarkably challenging with conventional HCI methods such as user experiments or interviews.

Design Fiction, Speculative Design, or Critical Design have emerged as methods to grapple with the possible futures inherent in emerging technologies. These methods create fictional worlds oriented around proximate futures of technology allowing researchers to contemplate the consequences and possibilities of new technologies. Speculative and critical methods help us think rigorously and systematically about the future, but also playfully. Our aim with this track is to create a venue for research projects which adopt less conventional methods and in the long term become a frontier publication avenue for such research projects. Submissions may include a variety of methods, but they **MUST** include a section that critically engages with the related research by using tools such as *as fictional abstracts*, *fictional prototypes*, *speculative design proposals*, or *pastiche scenarios*. Accordingly, we do not have a clear boundary on the topics we accept, however, some of the exemplar topics include:

- Body-integrated Technologies
- Brain-Computer Interfaces
- Techno-Spiritual Studies
- Alternative forms/conceptions of intelligence
- Afrofuturism, Black Futuring, Feminist Science Fiction
- Indigenous Futurism
- Posthuman Subjectivities
- Dystopia and Utopia Studies
- Politics of race, class, gender, and ability in imagined futures
- Altered States of Consciousness
- Transhuman and Posthuman Technologies
- Robotic Agents & Artificial Intelligence
- Habitation of Space
- Solarpunk, Steampunk, Cyberpunk

If you are unfamiliar with the methods mentioned in this track but still would like to submit your research, we recommend a few readings that can lead to a successful submission (see [here](#)). These methods can help researchers form novel perspectives to engage with their topics. Therefore, we expect submissions from all fields and encourage authors to engage with the fictitious, speculative and critical design methods. *If you have questions, please contact [oguz.buruk@tuni.fi](mailto:oguz.buruk@tuni.fi)*

# ACADEMIC MINDTREK

3rd – 6th October, 2023  
Paidia Living Lab of Play, Nokia Arena, Tampere

## Augmented Cities and Communities

**Chairs:** Mattia Thibault (Tampere University), Anton Nijholt (Twente University), Valentina Nisi (Instituto Superior Técnico) and Johanna Ylipulli (Aalto University)

**Description:** Cities have always been marked by the technological augmentation of space. From paved streets to aqueducts, from energy grids to extended realities - the incessant introduction of new technologies in the urban environment requires continuous adjustments. Digital technologies gave rise to paradigms such as the Smart City – or Smart Citizens – to codify the intricacies of the relations between digital and physical urban spaces, which now also covers Digital Twins and extended realities (XR).

Today's Augmented Cities are sites for all sorts of interactions and experiences, including playful reappropriations of technology (Nijholt 2017) or derive across realities (Ylipulli et al. 2016). Today's urban spaces are inhabited by a growing percentage of the world population, which will reach 60% by 2030. The inhabitants from Augmented Communities, are made of increasingly smarter and more playful human residents, but also a variety of posthuman inhabitants such as animals, robots, and AI. Internal and international migrations, additionally, are a driving force for urbanization, bringing opportunities and challenges to cities, communities and governments (Nisi 2021). The combinations of urban and citizen augmentations open the doors for all sorts of future developments that today we can only speculate about (Thibault et. al. 2020).

The topics of interest include, but are not limited to:

- Smart and Playable Cities: urban technologies, digital twins, urban AI, urban gamification, hackable cities
- Smart and Playful Communities: wearable urban technologies, bottom-up smart projects, transhuman citizens
- Posthuman and post-Anthropocene cities: urban animals, AI, Internet of Animals
- Sustainability and inclusivity: ecologic and climate resilient cities, e-mobility, the fabrication city, cities and disability, cities for all ages, gender-neutral cities, inclusive and cohesive cities for migrant and vulnerable communities

*Nijholt, A. (2017). Playable cities. Singapore: Springer.*

*Thibault, M., et al. (2020). Transurbanism: Smart Cities for Transhumans. In Proceedings of the DIS Conference, 1915-1928.*

*Nisi et al. (2021) Impalpable Narratives: How to capture intangible cultural heritage of migrant communities. In C&T '21, 109–120*

*Ylipulli, J., et al. (2016). Chasing Digital Shadows: Exploring future hybrid cities through anthropological design fiction. In Proceedings of the 9th Nordic Conference on HCI, 1-10.*

# ACADEMIC MINDTREK

3rd – 6th October, 2023

Paidia Living Lab of Play, Nokia Arena, Tampere

## Metaverse

**Chairs:** Nannan Xi (Tampere University), Fiona Nah (City University of Hong Kong), Philipp A. Rauschnabel (Universität der Bundeswehr München), and Sylvia Xueni Pan (Goldsmiths, University of London)

**Description:** With the rapid development and maturity of innovative information and computing technologies, the vision of an alternate and decentrally organized digital world has arisen - often referred to as the “metaverse”. The ongoing debates and research initiatives have not yet fully concluded what exactly constitutes a - or the - metaverse but we know from research that virtual and hybrid reality formats, often summarized under the umbrella term “XR” (X can be replaced by any form of new reality), will play a dominant role. More specifically, concepts such as Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR) will provide access to Metaverse-environments. Within these environments, cryptocurrencies, digital twins, avatars, digital identities, and new social/legal systems will likely play important roles in distinguishing the metaverse concept from the digital environments we know today.

On a broader level, little is known about the general “nature” of the metaverse concept (e.g., how different players define and evaluate it or how it can impact societies at large). In contrast to the idea of the metaverse, XR technologies have been on the market for several years and they provide multiple opportunities for research that include but are not limited to, usability, comfort, functionality, interactivity, vividness, privacy, ethical and legal issues, and unexpected adverse outcomes. Such hurdles and concerns warrant researchers’ attention.

We encourage submissions from any disciplinary background that uses any research approach. Authors of accepted papers in this track are also invited to submit an expanded version of their papers to the AIS Transactions on Human-Computer Interaction (THCI) after the conference.

The topics of interest include, but are not limited to:

- Usability: e.g., design, interface, and evaluation
- Adoption: e.g., acceptance, usage, and satisfaction
- Dark side: e.g., challenges, risks, and ethical concerns
- Experience: e.g., affect, enjoyment, playfulness, presence, immersion, embodiment, flow, interactivity, and vividness
- Information and knowledge: e.g., cognitive skill, learning performance, training, information processing, and knowledge management
- Social interaction: e.g., crowdsourcing, collaboration platform, team building, co-creation, collaboration, competition, and social capital
- Organizational system: e.g., decision-making, strategic management, leadership, innovation, and communication
- Value and outcomes: e.g., individual well-being, self-efficacy, trust, pro-environmental outcomes, sustainability, human rights, and cultural aspects

# ACADEMIC MINDTREK

3rd – 6th October, 2023  
Paidia Living Lab of Play, Nokia Arena, Tampere

## Human-nature interaction

**Chairs:** Ferran Altarriba (Tampere University), Velvet Spors (Tampere University), Katherine Isbister (University of California, Santa Cruz), Pat Brundell (University of Nottingham)

**Description:** technologies to support, encourage and inform human-nature interaction. We welcome a broad range of research topics and projects that explore the potential of tech to enhance people's experiences of and relationships with(in) nature. In particular, we are interested in works that transcend the bounds of techno-solutionism; that is, works that explore how technology could contribute to enriching human-nature interactions beyond productivist or otherwise utilitarian frames, thus embracing the importance of alternative values such as joy, fun, care, or multi-species inter-relatedness. Overall, we intend to stimulate a conversation around the potential of technology to support future human-nature entanglements that are experientially rich, socio-culturally meaningful, ecologically caring, and ultimately, joyful and fun.

We welcome papers representing various research approaches and methodologies. Due to the track's theme and focus, we expect the conversation to have a slight orientation toward HCI, interaction design, and design research. However, we also welcome submissions from other disciplines such as social sciences or the arts, e.g., in the form of research or artistic work centred on the impact of tech on people's relationship with nature. We invite a range of different submission types, including theoretical works, argumentation essays, empirical studies, design cases, annotated portfolios and pictorials, experiences, artworks, and methods papers.

The topics of interest include, but are not limited to:

- The impact of technology on human-nature interactions
- Technology design centred on values of joy and/or care (for the environment, for oneself, for other humans, for other species...)
- Celebratory technology for nature-related activity
- Technology that imitates, simulates, or augments nature experiences
- Design research that touches upon environmental and ecological justice, restoration, sustainability, and/or climate change
- Participatory engagements that reflect on local flora and fauna through technology
- Playful or gameful designs targeting forestry experiences
- Novel methods for co-designing for and/or from the forest
- Critical, speculative, and/or theoretical works that reflect upon these themes and concerns
- Forest-related future making

# ACADEMIC MINDTREK

3rd – 6th October, 2023  
Paidia Living Lab of Play, Nokia Arena, Tampere

## Datafication for Good

**Chairs:** Zampeta Legaki (Tampere University), Daniel Fernández Galeote (Tampere University), Kostas Karpouzis (Panteion University of Social and Political Sciences)

**Description:** During the last decade, the world's data has been doubling every two years. At the pace at which humans create and consume it, data is expected to increase exponentially. This technological trend that translates reality into a digitized source of data (i.e., datafication) comes to enhance our perspective on how we look at the world, how we understand it, and how we can forecast its future. Given the vast amounts of data generated in parallel to human technological progress, society is faced with the challenge of transforming a world full of data into a data-driven world.

To do so means to raise awareness and maintain fairness and safety, support understanding, and eventually, well-informed decision-making about current major societal challenges, including health, demographic change and wellbeing; food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the bioeconomy; secure, clean and efficient energy; smart, green and integrated transport; climate action, environment, resource efficiency, and raw materials; inclusive, innovative and reflective societies; and secure societies - protecting freedom, security, and at-risk populations.

This track welcomes contributions that focus on persuasive technologies, human-computer interaction, and strategies that aim to support public understanding, engagement, or dissemination of societal challenges (e.g., data-driven strategies, playful methodologies), and/or are related to the Sustainable Development Goals.

The topics of interest include, but are not limited to:

- Data for good, data for change
- Information systems, data visualization, visualization analytics
- Information design, data journalism, and data activism
- Prototypes, applications, and playful and gameful approaches and design for social change
- Artificial Intelligence (AI) and Machine Learning (ML) methodologies



# ACADEMIC MINDTREK

3rd – 6th October, 2023  
Paidia Living Lab of Play, Nokia Arena, Tampere

## Dark Side of Information Technology

**Chairs:** J. Tuomas Harviainen (Tampere University), Henri Pirkkalainen (Tampere University) and Kristian A. Bjørkelo (University of Bergen)

**Description:** Many potentials of information technologies (IT) relate to increased productivity and performance as industries adopt new ways of working due to digitalization. IT use has nevertheless also been associated with a number of negatively-associated outcomes and side effects. The term “dark side of IT use” refers to a “collection of ‘negative’ phenomena that are associated with their use, and that have the potential to infringe the well-being of individuals, organizations and societies”. Prior literature in the work-related context has examined aspects of employee’s technostress, security and privacy concerns, information load, IT interruptions and deviant workplace behaviors. In non-work-related context, researchers have examined phenomena such as technostress and well-being strains in the use of social networking sites, excessive IT use, coping strategies for negative IT experiences, fake news, illicit content, alienation in smart homes, affording extremist and racist discourse and organization, fomenting civil strife, toxic discourse, and cyberbullying, as well as algorithmic bias, surveillance and ethical issues.

As new technologies emerge, so do more and varied negative impacts. We invite submissions that explore new, emerging phenomena, advance prior literature and apply/develop new measures, methods and insights related to the dark side of IT use. Thus, we invite theoretical/conceptual articles, empirical research (e.g., in-depth case/field/interview studies, surveys, experiments, longitudinal studies), meta-analyses and others embedded in work and non-work-related contexts.

The topics of interest include, but are not limited to:

- Negative outcomes or side-effects of using emerging technologies
- Issues on interacting with Artificial Intelligence
- Deception and malicious use of IT (e.g., disinformation)
- Technostress and strains
- IT addiction, IT dependence and problematic IT use
- Multitasking
- The effects related to privacy and security concerns
- Toxic discourse, cyberbullying and internet stalking
- Work surveillance
- Polarization of society
- Extremist content
- Memetic Warfare
- Algorithmic bias
- Rebound effects of digital sustainability technologies
- The Dark Web, illicit content, and disnormative information practices
- Dark patterns in the monetization of digital services
- Power misuse with the Internet of Things technologies
- Ethical issues with blockchain applications

# ACADEMIC MINDTREK

3rd – 6th October, 2023  
Paidia Living Lab of Play, Nokia Arena, Tampere

## Robots and AI in Everyday Life

**Chairs:** Sumita Sharma (University of Oulu), Mohammad Obaid (Chalmers University of Technology), and Yixiao Wang (Singapore University of Technology and Design)

**Description:** Our everyday lives are more technology-rich than ever with fast-emerging Artificial Intelligence (AI) technologies impacting our lives in various ways - from ChatGPT taking the world by storm when it comes to student essays or journalism, to the propagation of biases (such as gender, racial) in algorithmic decision making. Robots are also rapidly spreading to all spheres of life and taking more roles in society, from massive industrial automation to supportive applications in education, medicine, and households.

For this track, we welcome papers focusing on all things related to Robots and AI! This includes how various demographics of people interact with robots and AI in their everyday lives, the impact of such interactions on the people, community, and society at large, the ethical and societal issues that arise, and also explorations of newer ways of interactions.

We especially encourage papers that present explorations, experiments, and/or field studies focusing on AI-embedded robotics that are socially interactive/intelligent. This track is a great opportunity to initiate a multidisciplinary discussion on the key challenges and opportunities of human-robot interactions and human-machine (AI) interactions on theoretical and practical levels.

The topics of interest include, but are not limited to:

- Artificial Intelligence and Cognitive Sciences
- Human-robot communication and interactions
- Ethical perspectives on Robots and AI (data privacy, security, trustworthiness, transparency, fairness, accountability)
- User-centred and machine-centred design: theories, methods, frameworks
- UX in Robots and AI

# ACADEMIC MINDTREK

3rd – 6th October, 2023  
Paidia Living Lab of Play, Nokia Arena, Tampere

## Technology in Education

**Chairs:** Muhterem Dindar (Tampere University) and Daniel Bodemer (University of Duisburg-Essen)

**Description:** Rapid technological advancements have fastened uptaking of digital tools and environments in the educational landscape. Games, simulations, extended reality mediums, and internet-enabled platforms have been increasingly used for teaching and learning within and outside the schools. The challenges in designing effective, efficient and enjoyable learning experiences with digital technologies have drawn the attention of scholars from a broad range of fields including psychology, learning sciences, and computer science. This track provides an opportunity for the researchers to partake in transdisciplinary discussions and collaborations on designing and implementing context-aware, social, adaptive, personalized, and playful technologies for education.

The topics of interest include, but are not limited to:

- Gamified/Game-based Learning
- Virtual, Mixed and Augmented Reality Applications in Education
- Teaching and Learning with Artificial Intelligence
- Learning Analytics
- Human-Computer Interaction in Educational Technology
- Online Learning Platforms (e.g. MOOCs, and video conferencing systems)
- Mobile Learning Systems
- Computer-Supported Collaborative Learning
- Data and Methodological Issues in Digital Education

# ACADEMIC MINDTREK

3rd – 6th October, 2023  
Paidia Living Lab of Play, Nokia Arena, Tampere

## Accessibility and Inclusion in the Digital Society

**Chairs:** Markku Turunen (Tampere University), Vasiliki Mylonopoulou (University of Gothenburg) and Pauliina Baltzar (Tampere University)

**Description:** Only some of the disabilities are visible in the physical world. When it comes to digital space, all disabilities are more or less invisible, as digital spaces are often used at home. From the physical society, we can identify accessibility barriers more easily: buildings can be accessed only using stairs or there is no elevator. How about from a digital society? For some of the aspects we pay attention, such as too small font size, but do we pay attention to whether the websites work with screen readers? Do we acknowledge, if the digital world is perceivable, operable, understandable, and robust, is it accessible to all people?

Some ways have been created to support the inclusive, accessible design of digital society. In 2016 United Nations added the reformative promise NO ONE LEFT BEHIND to the Sustainable Developmental Goals. By 2018, countries in the European Union had to have relevant legislation to ensure the web accessibility of public services provided through apps or the web, via Web Accessibility Guidelines. These policies and derivatives show that accessibility to digital society is not just a perk but a necessity for a democratic society.

Up to recently, accessibility was an add-on feature to the digital world instead of being ingrained in the design process. Involvement of various users through participatory design has increased throughout the years, organized bodies for people and patient involvement in research are created in different countries, and more people with diverse needs start to influence the design of digital interventions. Regardless of this involvement, we have a long way to create an accessible digital society.

In this track, we invite multidisciplinary researchers and practitioners who work with matters of diversity, accessibility, disability, and design justice to submit.

A range of types of papers can be submitted in this track including literature reviews, empirical studies, theoretical papers, and experimental studies.

Topics of interest include, but are not limited to:

- Accessibility of tools, designs, and methods
- Design methods and tools for inclusive user research and user involvement
- Designing technology and digital services for accessibility and inclusion
- Inclusion/exclusion of a population from the digital society
- AI and diversity
- Digital world and assumptions/preconceptions
- Game accessibility
- Gamers with disabilities