

Ethics of Mixed Reality Entertainment

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Abstract. Power dynamics, resources, urbanization, sociopolitical trends, cultural policies, audience diversity, digitization, and innovation deeply influence engagement in cultural production in Europe today. Cultural institutions increasingly adopt co-creation, cooperation, and collaboration to remain relevant, expanding their reach beyond traditional boundaries. Digital tools are critical in audience development, enhancing engagement and accessibility, and offering diverse perspectives. This workshop will explore the ethical implications of interactive locative entertainment, games, and social media within cultural heritage contexts. It aims to extend human-computer interaction (HCI) situational ethics to locative media and mixed reality gaming, addressing concerns such as physical trespass, cultural norms, and narrative integrity. Sponsored by the EU projects LogaCulture and BIG - Blockchain Innovation for Social Good, the workshop will foster discussions on ethical frameworks and innovative uses of emerging technologies. Participants will collaborate on developing ethical guidelines for mixed reality gaming and storytelling, with outcomes aimed at future iterations and broader dissemination in the cultural sector.

Keywords: Ethics · Mixed Reality · Locative Games · Cultural Heritage
· Natural Heritage · Blockchain Technologies.

1 Introduction

In Europe today engagement and participation in cultural production and activities is much about power and resources, urbanisation, social political tendencies in society, culture politics, audience and diversity, digitisation, competence and innovation. Culture and the arts need to resonate with a wider part of society to be perceived as relevant and contemporary. As a result, co-creation, cooperation, and collaboration have become the new language of the cultural sector. Institutions are becoming more porous, operating inside and outside their walls, missions, and traditions. Meaningful exchange with audiences, combined with a holistic understanding of culture's place in the community, is fundamentally changing the discourse of culture and cultural subsidy.

Digital games and narratives can expand engagement within the cultural heritage, helping users with interpretation, lowering the barriers to access [5], offering possibilities to present alternative views and perspectives, and address representational imbalances [9].

Digital tools are one of the key strategies of Audience Development⁴, considered a strategic and dynamic process enabling cultural organizations to place audiences - understood not only as visitors but also as individuals and communities – at the center of their action[1]. In this context, the digital factor refers to projects and cultural organizations’ strategies that strongly rely on it as a key, powerful aspect to reach audiences and foster engagement.

However, the assumption that a technology that has the power to transform people’s experience of place will naturally raise unique ethical challenges [12], making it essential that digital heritage occurs within an ethical context. While there is work looking at situational ethics in HCI [15] and digital tools within Dark Tourism[6] only recently ethical frameworks were proposed for MR games[12]. We need to explore the many ethical concerns around locative information at heritage sites: narratives shape attitudes and cultural memory, promote or conceal important truths, engage and inform audiences differentially, and assume a legitimacy to interfere with those spaces[13].

This workshop will explore the challenges and opportunities associated with the ethical implications of interactive locative entertainment services, games, and social media. We want to expand human-computer interaction (HCI) situational ethics[15] into locative media and augmented and mixed reality gaming and entertainment. As part of an EU-funded Locative Games for Culture project (LogaCulture⁵), the authors are looking at developing an ongoing ethical framework to inform the design to avoid unintended consequences that digital cutting-edge technologies can generate (i.e., from anti-social behavior to dark tourism[6]) and resolving legal questions about the duty of care of designers and the rights of creative stakeholders (artists and writers).

Starting from the ethical responsibilities of place and people[12], the authors extend on the work on location aware multimedia stories (LAMS) and trans-media storytelling [16, 3, 13, 14, 4, 10, 19, 20], exploring how ethical frameworks can avoid physical trespass, respect cultural norms and heritage, safe passage, respect for social and psychological norms, and awareness of values embedded in narratives. Moreover, the workshop discussions will contribute to envisaging fair and novel uses of cutting-edge distributed technologies (generative AI[7], blockchain and DLTs[22, 11]) to heritage and culture[18, 17]. Finally, the interactions and discussions emerging from the workshop will further the author’s commitment toward an inclusive, decolonial, posthuman approach to all forms of heritage. Sponsored by the EU Projects LogaCulture and Blockchain for Good

⁴ European Commission, Directorate-General for Education, Youth, Sport and Culture, Bollo, A., Da Milano, C., Gariboldi, A. et al., Study on audience development – How to place audiences at the center of cultural organizations – Final report, Publications Office of the European Union, 2017, p. 54-55.

⁵ <http://logaculture.eu>

(BIG)⁶ this first workshop will focus on the game ethics in the context of mixed reality and metaverse entertainment, with the intent of continuing to gather and maintain an active community of researchers and practitioners around the topics of ethics of heritage and cutting-edge interactive media. For this reason, the workshop’s ongoing and expected outcomes include organizing further versions of this workshop at future and connected venues, such as Hypertext and Social Media ⁷, Designing Interactive Systems ⁸, and further editions of ICEC⁹. This space will actively encourage discussion targeting ethics of interactive entertainment such as Locative Storytelling and gaming, Mixed and Extended realities experiences around forms of heritage hosted in cultural institutions (GLAMS) and open-air natural reserves, rural areas, and archeological sites. A specific introductory keynote, delivered by Cristina Da Milano in ethics and heritage, will provide a valuable open forum for early and emerging work in the broader area [2, 8]. Researchers and practitioners working with interactive locative entertainment services, games, and social media are invited to participate, sharing their ideas, case studies, and experiences. While not mandatory, participants will be asked to submit a short position paper on their ideas on a practical game, social media, or entertainment experience. All the participants’ position papers will be available on the workshop website. After the workshop, depending on the number of submissions, we will consider further ways of disseminating the position papers and contributions.

2 Workshop Format

This workshop will build on the framework proposed by Millard et al., which reveals 26 ethical concerns across five dimensions: Claim Rights (cultural norms and trespassing), Duty of Care (player safety and fairness), Social Justice (inclusive and harassment-free design), Privacy (data protection), and Control (player freedom)[12]. It will depart from the identified 59 tactics within 13 strategies, grouped into Design (inclusive practices, stakeholder involvement, editorial processes), Participant Management (training, positive framing, data control), and Logistical (monitoring, pretesting) strategies. These strategies primarily support Duty of Care, highlighting a need for more strategies in Participant Management and Logistics[12].

During the workshop participants work solo or as self-assembled groups to tackle the creative challenge of developing a paper prototype of MR gaming ideas that challenge ethical issues and opportunities. At the end of the session, The participants will document and present their artifacts and discuss them in a plenary session. The documentation of the artifacts will be archived on the Workshop website, which is part of the LoGaCulture EU-funded project

⁶ <http://bigerachair.tecnico.ulisboa.pt>

⁷ <https://ht.acm.org>

⁸ <https://dis.acm.org/2025/>

⁹ <https://ifip-tc14.org>

¹⁰. Further iterations of the workshop will build on these initial efforts with possibilities to participate in future editions and potential journal special issues.

2.1 Schedule

- 14:00-14:15: Welcome and introduction by organisers.
- 14:15-15:00: Ethics in Mixed Realities - Keynote Presentation by Cristina Da Milano (with discussion and Q&A)
- 15:00-15:15: Coffee break
- 15:15-15:30: Activities and groups set up for the ethics game Jam
- 15:30-17:00: Ethics game jam
- 17:00-18:00: Games presentation and Plenary discussion

2.2 Expected Outcomes

The expected outcomes of the workshop are multi-folded: i) Initiate a forum to discuss the ethics of mixed reality gaming and storytelling, possibly continuing with workshops at other related conferences such as CHI and DIS ACM conferences. ii) An ethics and gaming jam format to replicate and refine at future venues.; iii) A set of practical game papers and experience quick prototypes and ideas to take home and further explore to support the unpacking and discussion of ethics principles and issues around MR games.

3 About LoGaCulture and BIG EU Projects

LoGaCulture ¹¹ brings together European academic leaders in digital locative experiences to explore how a new generation of innovative locative games might benefit European society through its cultural heritage sites. Locative Games have existed for two decades and are in the process of entering the mainstream. Typically, they are applications or websites accessed on a location-aware smartphone with content and interactions triggered by locations. Thus the experience is a mixed reality, combining digital and the real world elements. Locative cultural heritage games take the form of digital tours, narrative games, locative literature, or interactive puzzles at cultural heritage sites, and enable visitors to see places ‘with new eyes’, revealing hidden aspects and creating new types of interaction. This has resulted in a great deal of experimentation. Unfortunately, this means the design knowledge for locative games is spread thinly through a vast body of literature. In addition, the experimental nature of these systems means there is less focus on sustainable deployments, with many having a limited lifespan, highlighting a lack of understanding about how they could be deployed for the longer term in real cultural heritage locations supported by existing heritage staff and structures.

¹⁰ <https://logaculture.eu/icec2024-ethics-workshop/>

¹¹ <https://doi.org/10.3030/101094036>

The overall goal of BIG Project – “Enhancing the research and innovation potential of Tecnico through Blockchain technologies and design Innovation for Social Good”¹² – is to expand the research and innovation potential of Distributed Ledgers Technologies, contributing to foster a digital ecosystem taking advantage of Blockchain technologies and design Innovation for social Good. The project operates through the hiring of a BIG ERA Chair and an in-campus strategic lab, the BIG lab. One important component of the project is to explore how decentralized technologies (e.g., blockchain and decentralised autonomous organisations - DAOs) can be used for deploying innovative forms of adaptation and behaviour change in relevant domains such as tourism, cultural heritage and food chains. One notable example related to this project is how these technologies could scale solutions related a New European Bauhaus (NEB) lighthouse project the Bauhaus of the Seas[21] through distributed autonomous organizations (DAOs) and Non-Fungible Tokens (NFTs)[22] that support novel forms of collaboration including non-human agents in the context of intertwined natural and cultural heritage contexts.

4 Organization

4.1 Workshop Organizers

Valentina Nisi is a Full Professor at IST, University of Lisbon (Portugal), Affiliated Faculty at the HCI Institute, Carnegie Mellon University (USA), and founding researcher at the Interactive Technologies Institute (ITI/LARSyS). From Fine Arts and Screenwriting to Design and HCI, Valentina’s background contributes to an interdisciplinary view of societal challenges, combining Research-through-design approaches with post-humanistic concerns. Her research focuses on the participation of marginalized groups and unheard voices and the respect, celebration, and preservation of various forms of tangible and intangible heritage through storytelling and gaming, recently focusing on nature:cultural constructs.

Nuno Jardim Nunes is a Full Professor at Tecnico U. Lisbon and the President of the Interaction Technologies Institute (ITI), a LARSYS Associated Laboratory research unit. He’s also co-Director of the Carnegie Mellon International Partnership (www.cmuportugal.org) and affiliated faculty at the HCII at CMU. Nuno’s research interests lie in applying models to software, system, and service design for environmental sustainability and participatory culture. Nuno is a strong advocate of the role of design in engineering. Nuno organized several key conferences of the ACM SIGCHI and published more than 200 peer-reviewed papers in international journals and conferences in software engineering, HCI, and service science. He was PI and co-PI of several research projects totalling more than 25M€ from European to national and industry-funded.

Charlie Hargood is Associate Professor at the Computational Culture Group, Creative Technology, Bournemouth. He is a Principal Academic in Games Technology in the Creative Technology department at Bournemouth University.

¹² <https://doi.org/10.3030/952226>

He has a research background in narrative systems, hypertext, ubiquitous technology, and location-aware applications. He has been involved with the ACM hypertext conference since 2008, twice winning the Englebart best paper award and often serving on the program committee alongside serving as ACM SIG-Web’s information director. He has organized the NHT Workshop since 2011, and the AIS Workshop since 2017 and was general chair for ICIDS in 2020.

David Millard is Full Professor of Computer Science at the University of Southampton, UK. A leading figure in the Hypertext community, he has over 240 publications in international conferences and journals, was Vice-Chair of ACM SIGWEB from 2015-2019, and is the current chair of the ACM Hypertext steering committee. He has been a program committee member for over 35 conference events, including ACM CHI, Web Science, SocInfo, and IEEE ICALT, as well as ACM Hypertext and ICIDS, where he also served as the Programme Chair (in 2019 and 2020, respectively). David has won awards for his work on hypertext structures and authoring, and his current research interests are focused on hypertextual structures in games, locative literature, mixed reality games, and digital narratives.

4.2 Invited Speakers

Cristina Da Milano holds a degree in Archaeology (University of Rome) and an MA in Museum Studies (University of Leicester). President of ECCOM, an organization founded in 1995 that carries out research projects, training activities, and consultancy at a national and international level, she has been involved in several EU-funded projects and studies with specific reference to cultural access, participation, and audience development. She is an expert in European cultural policy and programs. She lectures in many postgraduate courses and Masters. From 2015 to 2021, she has a member of the board and vice-president of Culture Action Europe, and from 2017 di 2021, of the board of directors of Teatro di Roma; she was a member of the Commission for the National Museum System of the Italian Ministry for Culture, and she is currently a consultant for the National Recovery and Resilience Plan.

5 Conclusion

The intersection of cultural heritage and technology, mainly through mixed reality (MR) gaming and locative media, offers significant potential to enhance cultural engagement. However, this integration must be managed ethically to ensure artistic and cultural integrity, inclusivity, and participant safety. This workshop starts a series of workshops exploring the ethical dimensions such as Claim Rights, Duty of Care, Social Justice, Privacy, and Control, providing a framework for responsible design. Starting in Manaus at the ICEC 2024 conference, this workshop series will also try to cover various cultures and experiences in which these technologies emerge and impact. The outcomes include the creation of practical game prototypes and a replicable ethics and gaming

jam format, all aimed at fostering ongoing dialogue and innovation in ethical interactive media.

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