Interactive Storytelling for Communities, Heritage and Public Engagement

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ABSTRACT

Interactive storytelling is gaining new possibilities with the rise of novel technology trends, such as extended reality (XR) and AI. In this interdisciplinary one-day workshop, we address the possibilities the interactive technologies and HCI can offer in interactive storytelling and sharing narratives for communities, cultural heritage, and for engaging larger user groups. The workshop also addresses how the future of interactive storytelling is shaped so that the human and more-than-human aspects are not forgotten and pluralism and different voices can be heard. In this workshop, researchers and practitioners will share their research and discuss the current trends and topics in interactive storytelling, where the possible application areas range from cultural heritage to education, entertainment, tourism, and wellness.

CCS CONCEPTS

• **Human-centered computing → Human computer interaction (HCI)**.

KEYWORDS

interaction design, storytelling, co-design, artificial intelligence, XR

1 INTRODUCTION

The rapid development of technologies offers a fruitful framing for exploring the possibilities and challenges of interactive storytelling. The future of Artificial Intelligence (AI) for society has been seen as transformative [13] and increasing inequalities through bias [18]. Generative AI has also been considered democratizing through empowering users from different backgrounds to innovate and express themselves [28]. Research has explored the possible future of Extended Reality (XR), where immersive devices become a ubiquitous part of our everyday lives [15]. XR technologies enable immersive experiences for, e.g., industry training [9], cultural heritage [17] and education [4]. The three main aims of the workshop are 1) to connect researchers interested in interactive storytelling and new technologies, 2) to explore opportunities and challenges related to emerging technologies, e.g. generative AI, for cultural heritage, social engagement, marginalized communities' storytelling, and 3) to relate the topic across multidisciplinary research community and industry practitioners. The workshop welcomes a multidisciplinary audience working on various aspects of interactive storytelling, examples illustrated in Figure 1.

2 RELATED WORK ON NOVEL TECHNOLOGIES AND INTERACTIVE STORYTELLING

HCI has been proposed to take action in enabling technology-mediated social participation [27]. Various studies have explored the ways technologies can be harnessed to give people a voice and empower them, e.g. through digital stories and tools, [22, 30]. Today, storytelling is often integrated into museum context for presenting cultural heritage [23], or different local histories to visitors through games [20] or walking tours [5]. Also, interactive technologies have been deployed at schools for teaching computer science concepts through engaging in collecting sensor data about their local environment [11]. Digital participatory methodologies have been applied and have the potential for facilitating inclusivity [3], and sustainability [6].

Figure 1: Prior work by organizers. A) Interactive playground, B) Modelling archival material through digital tools in order to tell stories in XR, C) Experimenting with generative AI for Indigenous Sámi storytelling, and D) Location-based mobile storytelling.

Storytelling is an essential part of human culture, and deeply integrated into our understanding of the world [12, 25], dependent on the medium through which it is told [21]. Interactivity can be seen as its own type of medium, separate from, text, pictures or video, and requires special design considerations [31]. Interactive storytelling means engaging with the paradox of the author's creation of comprehensible narratives of stories while breaking up those storylines through user interactions [1, 24, 31]. The HCI community has for a long time engaged with interactive storytelling, both through exploring the concept as such [2], as well as studying it from different angles, such as sustainability [10] and cultural heritage mediation [2], or in relation to specific technologies such as AI [7] or Mixed Realities [8]. Also, embodied and first-person perspectives on interactive storytelling have been a focus, for instance, as a tool in design processes [29]. Interactive storytelling can be a strong contributor to learning experiences [19], relating to, e.g., experiential learning [16] and situated and immersive learning experiences utilizing, for example, playfulness, different technologies on the mixed reality spectrum [14]. Interactive storytelling can be a powerful tool for creating reflections and learning situations related to, e.g., cultural heritage [24], futuring [26], and sustainability [10].

3 THE WORKSHOP

The one-day workshop contains inspiration talks and research presentations by workshop participants, interactive exercises related to the topic, thematic discussion, and demos. In the spirit of open discussion and to pave the way for future collaboration, the participants will engage in different activities and group tasks during the day. The topics in the interest of the workshop include, but are not limited to;

- Case Studies and Applications
- Methods for Creating Interactive Storytelling
- Community-Based Interactive Storytelling
- Using Interactive Storytelling as a Tool for Inclusive Design Processes
- Interactive Storytelling for Learning and Education
- Interactive Storytelling to Mediate Cultural Heritage

- Ethical Explorations of Interactive Storytelling
- Indigenous Storytelling and AI
- Transformative Roleplaying and Play
- Storytelling for Critical Design, Sustainability and Futuring
- Wellbeing, Health and Social Inclusion through Interactive Storytelling

4 ORGANIZERS

Siiri Paananen is a PhD student at the University of Lapland, User Experience Design group. Her research focuses on augmenting cultural heritage experiences with interactive technologies and engaging the users and stakeholders through co-design methods.

Karin Johansson is a PhD candidate at Uppsala University. She has worked for several years in the cultural and creative sector, focusing on playful interactive storytelling on issues such as sustainability and democracy. Karin is also running her own design company, focused on innovation projects creating playful learning experiences.

Lars Ailo Bongo is a professor in computer science at UiT The Arctic University of Norway and an adjunct professor at the Sámi University of Applied Sciences. He leads the Sámi AI Lab, which aims to use AI to change Sámi society for the better.

Clara Sayffaerth is a PhD candidate at LMU Munich focusing on the use of XR and AI for ubiquitous knowledge transfer. Previously, she worked for several years at the Deutsches Museum, where she studied the integration of XR technology in museums to foster interaction with exhibits and other visitors.

Eleftherios Papachristos is an Associate Professor at the Norwegian University of Science and Technology, where he leads the Human-Centred Technology group and the Human-Centred AI Lab. His research lies at the intersection of AI and Interaction Design, where he seeks to leverage AI to enrich human interaction within various sectors.

Mari Suoheimo (Ph.D.) is working as an associate professor of service design at the Oslo School of Architecture and design. Her research concentrates on how to approach wicked problems

in service design, and includes interest in storytelling as a service design method.

Mikael Wiberg is a full professor of Informatics at Umeå University, Sweden. He has held positions as a full professor in interaction design at Chalmers and as a chaired professor in HCI at Uppsala University, Sweden. Wiberg's research is centered around interaction, materiality and sustainability.

Jonna Häkkilä is a professor at the University of Lapland, Faculty of Art and Design. She conducts research at the cross-section of design and technology and is interested in the user experience design of futuristic topics in HCI. She leads the Lapland User Experience Design research group (LUX).

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