ADVANCECRT

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HEAR WE GO

Equal access for disabled people to cultural and leisure activities is a right. Currently, many of Ireland's cultural and heritage sites are inaccessible or partially inaccessible to a variety of disabilities, but it is particularly noticeable when considering visually impaired/blind individuals. This research asks; can interactive sound design enhance CH accessibility for someone who is visually impaired/ blind, facilitating a sense of "awe and wonder" (Smith & Richards, 2013, p. 243)?

INTRODUCTION

Inaccessibility for visually impaired/blind people can be due to the physical structure of the site, the way that information about the site or exhibits is presented (impacting an individual's participation and wayfinding within the space), or the effect of the "acoustic culture of silence" (Bubaris, 2014, p. 391) that is frequent in culturally significant sites both in Ireland and internationally. While several of Ireland's museums have blind-accessibility incorporated into their infrastructure (for example, braille signage) and sometimes even as the focus of their exhibits (for example, the EU VIBE Project with Josef and Anni Albers (2019)), frequently, people can find themselves excluded from a variety of cultural activities due to visual impairments. A similar trend is noticeable when looking at emerging immersive and gaming technologies, such as Extended Reality. Though Cultural Heritage (CH) and Extended Reality (XR) seem worlds apart, their accessibility barriers can be quite similar. This presentation discusses different access barriers faced in CH, museums, XR, and the games industry. It also delves into potential solutions and frameworks for addressing inaccessibility. Using immersive audio, sound design, and Extended Reality worldbuilding tools could facilitate the sense of "awe and wonder" (Smith & Richards, 2013, p. 243) at the "intangible" aspects of CH (Kosmas et al., 2019; Su et al., 2020) for visually impaired/ blind individuals.

OBJECTIVES

The main goal of this project is to develop an Accessible Augmented Audio Experience for a chosen site, specifically for blind and visually impaired people, based on material and narratives from Irish mythology, using interactive sound design. The secondary objective of the project is to address other accessibility barriers that could potentially be faced when working with these technologies within CH. For example, accessibility requirements and shortfalls of different extended reality hardware, cost, and the effectiveness of different sound transducers

RESEARCH ROADMAP

Stage 1:
Conduct accessibility studies to establish a baseline of current accessibility frameworks
1.1 Study physical sites and accessibility measures,
1.2 Study of virtual sites and accessibility measures.
1.3 Study of a chosen site for the project, and how blind accessibility is currently lacking.

Stage 2:
Create a prototype for a chosen site, utilising the accessibility tools extrapolated from the two other sites, and diegetic or dynamic sound design.
2.1 The first iteration will focus specifically on Interactive objects and narrative.
2.2 The second iteration of the prototype will focus on augmenting the first prototype with extra layers - Interactive characters, objects and narrative.
2.3 The third iteration of the prototype will focus on the gamification of the experience - interactive characters and objects, the addition of puzzles and challenges.

Goals 9, 10, and 11 are all in alignment with this work. Goal 9's focus on inclusive and sustainable infrastructure, Goal 10's focus on the reduction of inequality, and Goal 11's focus on inclusive, safe communities, are all represented. The project aims to facilitate better inclusion for a marginalized group within their wider community, as well as create a more inclusive and accessible infrastructure through sound design.

HOW DOES MY PROJECT CONTRIBUTE TO SOLVING THE UN SDG CHALLENGES BY LEVERAGING INDUSTRY AND ACADEMIC PARTNERSHIPS?

My project utilises academia from a wide range of disciplines - cultural heritage, sound design, and extended reality technologies to name a few. I have also worked with the Glucksman BEAM UP group in UCC, to discuss blind accessibility using sound for museum exhibitions.

From an industry perspective, in this project, I have had the opportunity to collaborate with a number of industry partners so far. One of these partners is the National Council for the Blind of Ireland (NCBI). I am also developing a collaboration with the Office of Public Works (OPW), and am hoping to connect with a company within the gaming industry, as interdisciplinarity is as important with industry connections as it is in my academic research.

In working with the NCBI and the OPW in particular, this project will create accessible frameworks and tools for increasing accessibility to Cultural Heritage sites, and the communities around these sites.

RELATED LITERATURE

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