RE:Lab
INTERACTION ENGINEERING

Furiose Interazioni

Furiose Interazioni is a TICHE technological demonstrator resulting from an interdisciplinary collaborative process of experimentation between traditional humanities disciplines and modern technologies. RE:LAB, partner in Tiche, has dealt with technology development and user experience design. F.I. aims to realize a digital atelier for developing technological solutions around Ariosto's Orlando Furioso and its imaginative universe.The digital technologies, designed to amplify learning processes, are developed through a double path inside the Mauriziano villa. The first one, for school students, is focused on the Orlando Furioso(Furiose Interazioni path). This is divided into 3 stations that focus on the crucial themes of Orlando Furioso: from chivalry to magic, and from travel to the relation between reason and madness. The second one, for the adult public, aims to open to everyone the spaces of the building, concerning the stately apartments' frescoed rooms(Stanze dell'Ariosto path).

Laboratory	RE:Lab
Specialization Area	Culture and creativity, Digital
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Keyword	artificial intelligence, cultural heritage, education, immersive experience

"An interactive journey into the imaginary universe of the poem Orlando Furioso. Technology demonstrator co-financed by TICHE Foundation."



Fig. 1: The Book of Spells



Fig. 2: The Daring Feats

Innovative aspects

Furiose Interazioni is as an innovative experiment in literary heritage enhancement: in Ariosto's country home The project is intended to bring a young audience, through immersive technologies, into the fantastic universe of Orlando Furioso, a classic that has been a reservoir of the European imagination for centuries. Originally conceived in an engineering context, this technology has transcended its initial boundaries thanks to the unconventional work of RE:LAB's technical team, which has integrated the visual narratives of Orlando's stories by adapting them to the combination of different objects and technologies. The implementation of the project has been driven not only by content but also by design, with a central role attributed to dialogue and collaboration between humanities and science disciplines. An analysis of the skills involved, a kind of "Skills Accounting," showed the presence of an interdisciplinary approach, with electronic engineers, software programming experts, designers for physical and digital components, museographers and designers specializing in cultural and literary heritage.

Potential applications

Furious Interactions aims to inspire future projects in the field of historic houses and to promote digital solutions that encourage a closer dialogue between humanities and science disciplines.

Description

The digital technologies designed to amplify learning processes are divided into the Furiose Interazioni path, designed for a target-specific audience of preschool up to secondary school students that includes: the Daring Feats where four symbolic objects custom-made 3D printed by designers equipped with sensors (NFC tags) are detected by a dedicated platform. The combination of a single object results in a three-dimensional holographic animation of the object itself, while the combination of two objects enables the viewing of a two-dimensional video animation.The Book of Spells is a sizable interactive touch table which reproduces the animation of an ancient book; users can immerse themselves in the characters through facial recognition in the ancient portrait of the poem heroes ; Journey to the Moonfaces provides two different solutions for the same narrative: the chariot and, on the other, the hippogriff, built through a collaboration between design and carpentry. The chariot, like a small immersive movie theater, welcomes young children with a double screen, front and back, to increase immersiveness. Then older participants can be experienced through an Oculus Quest 2, sitting astride the hippogriff, in a virtual reality experience. The Stanze dell'Ariosto path begins with "The Arioscope" a kind of palm reading in which the fates of Love, Fortune, and Future are declared by a technological system activated through vocal, tactile, and visual interaction.



Fig. 3: The Journey to the Moon

Application example

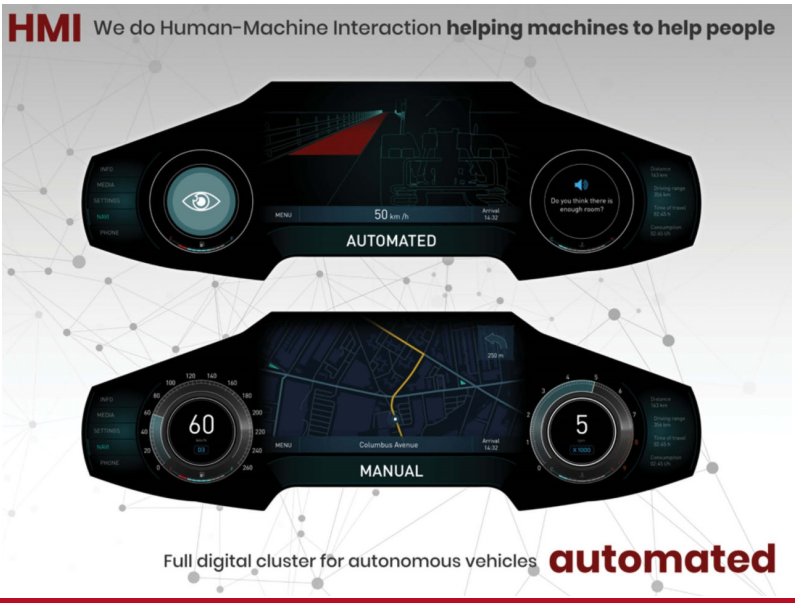
Furiose Interazioni is a TICHE demonstrator project that involves experts in the history of literature, childhood education, and interaction design with the shared objective of proposing innovative and immersive didactic methods for the digital enhancement of Ludovico Ariosto's work and the Mauriziano's spaces.

Furiose Interazioni is a project that concerns innovative ways of enjoying material and immaterial heritage through digital interfaces, respectively targeting the Mauriziano villa and the Orlando Furioso. In doing so, it experiments with a design process based on deeply interdisciplinary group work that combines three different levels of knowledge: theoretical, technological, and interactional. The project consists of two paths of digital installations created inside the birthplace of the poet. The first, designed for a target audience of preschool up to secondary school-aged children, is focused on the Orlando Furioso, reinterpreted in the context of the villa (i.e. Furiose Interazioni path). The second, designed for the adult public, aims to open to everyone the spaces of the building, with particular regard to the stately apartments' frescoed rooms, which are currently not accessible to people with disabilities (i.e. Stanze dell'Ariosto path).

Involved partners	TICHE Foundation (National Cluster of Technologies for Cultural Heritage) the technological partner RE:LAB; Reggio Emilia's Civic Museums; the Istituzione of Preschools and Infant-toddler Centres of the Municipality of Reggio Emilia, and Reggio Children.
Implementation Time	Approximately 12 person-month
Technology Readiness Level	TRL7 - System prototype demonstration in operational environment
Exploitation	Currently installed at the Mauriziano premises in the Reggio Emilia municipality.

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RE:Lab è una piccola-media impresa orientata alla ricerca la cui mission è l'ingegneria dell'interazione, ovvero quel ramo dell'ingegneria orientato all'identificazione e alla modellazione della migliore soluzione di interazione tra l'essere umano e i dispositivi tecnologici.
In RE:Lab convivono competenze di carattere ergonomico ed ingegneristico, che danno vita ad un approccio integrato detto Interaction Engineering: il sistema d'interazione viene progettato a partire dall'analisi delle esigenze e delle caratteristiche degli utenti finali e del contesto operativo, per poi essere sviluppato attraverso cicli di prototipazione e validazione sperimentale con utenti finali, fino al rilascio di un prodotto che risponde alle esigenze del consumatore finale o dell'operatore industriale.
RE:Lab si propone di:
• progettare, prototipare e sviluppare interfacce utente di sistemi informativi e di controllo;
• progettare, prototipare e sviluppare sistemi meccatronici, applicazioni nell'ambito delle telecomunicazioni, logistica, gestione delle attività produttive e office automation;
• promuovere l'attività di ricerca e il trasferimento tecnologico;
• partecipare a programmi di ricerca scientifica e tecnologica e sperimentare sistemi tecnici innovativi;
• fornire consulenza per la progettazione, la realizzazione e lo sviluppo software;
• promuovere e svolgere attività di ricerca applicata in settori tecnologicamente innovativi;
• organizzare corsi di formazione.
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Website http://www.re-lab.it

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Published on 02/10/2024