

A Mixed Reality: Development of a Mobile Timetable Application in Augmented Reality

1. Introduction

Augmented Reality is according to Azuma[1] a "variation of environments (VE)". A mixed reality combining the real and virtual environments. Meaning that digital objects can appear in real life through a camera or headset. This project explores the development of a mobile application that can be used to examine a room timetable for the computer labs in the university.

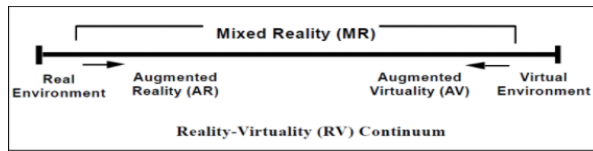


Figure 1: Milgram's Continuum

2. Aims

The aim of the project is to develop an application that can be used to examine a timetable for a room that includes bookings from lecturers in Augmented Reality for the mobile.

- Create User interface to facilitate bookings
- Create a database that contains timetables
- Create a detection algorithm that locates unique room markers.
- Display the timetable
- Book a timeslot, update the database and graphics

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3. Methods

- The literature review serves to explore the current literature of the Augmented Reality, the history and the people that made it a research field including Ivan Sutherland and Myron Krueger, development, current and future trends for AR.
- The case study examines how Augmented Reality applications are developed and how information is syndicated to the database. This looks at techniques used in the development phase and how the goal is achieved.
- The Rational Unified Process, an Agile development method will be used to develop the application. The SDK (Software Development Kit) that will be used is ARToolKit. The purpose of using AR in this case is to save time and may prevent the need to log in and book a time slot.



Figure 2: Pokémon Go



Figure 3: ARTOOLKIT

4. Outcome

The outcome of the project is to allow users to book a timeslot for a room using AR. To determine if the project has been a success, the application will be tested to make sure that Tracking, Marker Generation and Data Rendering function reliably. The expected outcome is that the user can see current room reservations using AR, and be able to add a timeslot using the UI on their phone. The database will then be updated with their booking.

5. Literature Cited

[1] R. T. Azuma, "A Survey of Augmented Reality," Presence: Teleoperators and Virtual Environments, vol. 6, no. 4, pp. 335 - 385, 1997.

Figure 1: Milgram's Continuum [Screenshot] at: <https://trowflit.wordpress.com/2010/07/28/a-concise-introduction-to-ar/> (Accessed on 03/10/2017)

Figure 2: Pokémon GO [Screenshot] at: <https://www.gamespot.com/articles/new-pokemon-go-update-arrives-heres-what-it-does/1100-6448876/> (Accessed on 03/10/2017)

Figure 3: ARTOOLKIT [Screenshot] at: <https://archive.artoolkit.org/> (Accessed on 03/10/2017)