

Paper 75 – Demonstration

Site Visit Assistance through Augmented Reality

T Molyneaux

J Brumley

P Piotto

A Molyneaux

RMIT University, Melbourne, Australia, tom.molyneaux@rmit.edu.au

RMIT University, Melbourne, Australia, brumley@rmit.edu.au

RMIT University, Melbourne, Australia, paulino.piotto@rmit.edu.au

Intuitive Labs, adam.molyneaux@bluewin.ch

Abstract

Field trips are essential in an engineer's education yet due to class size and resourcing pressures these are under threat of being removed or substituted by online virtual or classroom experiences. An augmented Reality (AR) approach has been created (on iphone/ipad) to investigate the feasibility of enhancing self guided field trips and reducing site support. The concept of augmenting real experience with information-rich media has been around since the 60s. However it has only been in the last 3 years that mobile applications have developed sufficiently and several such mapping and social tools are now on the market.

The student is guided to the start by GPS and standard maps, then logs-in. GPS and directional data is used to guide the student through the field trip, prompting the user with relevant contextual information, and asking questions – information/questions are only available when the student is at the appropriate place. The GPS, 3-axis accelerometer and the magnetometer are used to present the user with 360 deg, zoomable and interactive panoramas, taken from the user's actual location. Students are offered descriptive help and contextual information (audio and textual) and asked questions with a location and direction context. Once the student leaves the site they are logged off, the instructor notified and the results become available online.

A student's perspective will be presented to demonstrate the breadth of experience available. The emphasis will be on the generic activities and the pedagogy relevant to a wide range of disciplines. The potential in other disciplines will be discussed. The experiences of students and academics who have trialed the system will be presented and the lessons learnt in developing the application reported – particularly the developers and reviewers views of key limitations/strengths. A local demonstration will be made available to attendees with suitable technology following the presentation.