// CODE 3100 Introduction to Projects //

// Driving Machine //
// Marker Project //
// Oculus //
// Aerial Ropeway in a World Heritage Environment //
// Virtual Museum //

// Driving Machine //

// Aim //

// Aim //

Integrating a steering system into Unreal Engine 4 to enhance the driving experience.
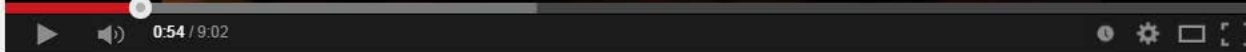
// Work Required //

// Work Required //

Fabricate a physical steering wheel that uses an Arduino microprocessor and the required sensors to steer a drivable truck in the UE4 computer game engine.

PLAYSEAT®

Home made pc steering wheel for farming simulator

paintball9621

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// Proposed Team Size //

4 Students

// Driving Machine //

// Marker Project //

// Problem //

// Problem //

Exploring cutting edge design solutions for a marker that indicates the existence Blacktown International Sports Park from the M7 motorway.

// Work Required //

// Work Required //

Students will work together with the Blacktown City Council and would present solutions to the General Manager and senior staff of Council. Site research, modeling and analysis. Sketch and developed design proposals employing an iterative design method that centers on laser cut and 3d printed models.

// Proposed Team Size //

5 Students

// Marker Project //

// Oculus //

// Problem //

// Problem //

Construction workers don't comprehend the lack of visibility faced by operators of heavy machinery.

// Work Required //

// Work Required //

Build interior/cab models for a crane, excavator and truck that would typically be found on Hong Kong construction sites . Deploy them in UE4 to be viewed using the oculus rift.

// Proposed Team Size //

5 Students

// Oculus //

// Aerial Ropeway in a World Heritage Environment //

// Problem //

// Problem //

In the 1890's the Katoomba "Coal and Shale Company" created one of the worlds first aerial ropeways for the transport of shale. Its buckets each carry 300kg of load and travel 3.6km passing by 200m tall cliffs on the way. After six months of spasmodic operation and 20,000 tons of shale the structure collapsed. Some parts were salvaged but most lies in the valley where it fell almost 120 years ago. The area is now a World Heritage area recognised for its exceptional diversity and integrity of the forest. How does technology fit into our understanding of World Heritage?
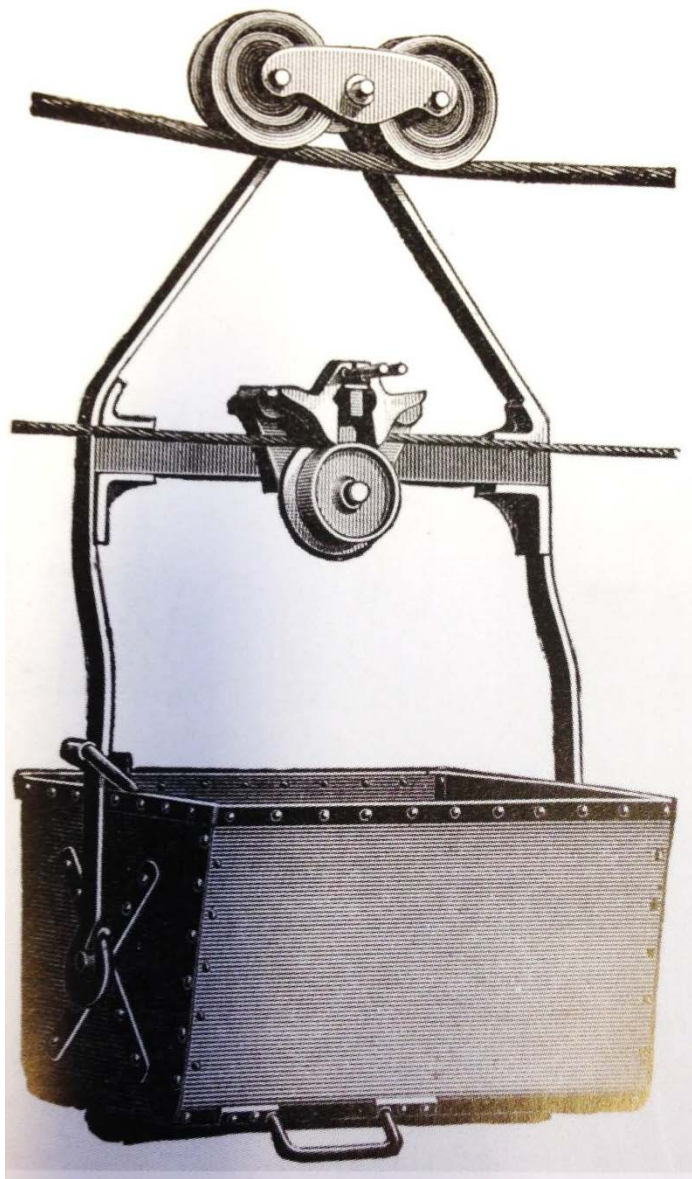
// Work Required //

// Work Required //

Students will recreate the landscape and aerial ropeway structures including models of the towers, buckets and architectural features at both ends of the ropeway. Information from the book "The Burning Mists of Time: A technological and social history of Katoomba" will be supplemented by material supplied by Phillip J. Hammon and material gathered directly by the students on site visits. The environment and interactivity will be created in UE4 with models made in 3ds Max. Existing 3ds Max models and their associated textures will be optimised for deployment on a mobile platform.

//   Previous Work   1.   2.   3.   //

// Proposed Team Size //

5 Students

// Aerial Ropeway in a World Heritage Environment //

// Virtual Museum //

// Background //

// Background //

Creating a Virtual Museum in a way that is practical for smaller, local or specialist museums, and bringing the resulting representations to communities at the fringes of existing outreach activities is the basis of this project. We will be able to take advantage of a rare opportunity at the University of Reading's 'Museum of English Rural Life' (MERL), which is due to close temporarily to undergo a major redevelopment, providing unencumbered access to the interior space and key objects in the collection . Using a novel mix of proprietary and emerging digital technologies, we will create a prototype virtual museum, based on part of MERL, and explore the possibilities for enhanced interactivity. The prototype can then be taken to communities who have restricted access to the museum, either through reduced mobility or perceptions of socio-cultural exclusion, and to the wider public, at which time ideas and opinions can be gathered to inform future research and development.

A collaboration with Academic Researchers from the University of Reading, UK

// Aim //

To create laser-scanned models of the large public spaces at MERL.

Using a mix of photogrammetry and laser scanning, to create digital models of a limited number of objects (approx. 10) of varying sizes and complexity.

To test the feasibility of augmenting these objects with additional information, such as photographs, text, and audio files, taken from the MERL archives.
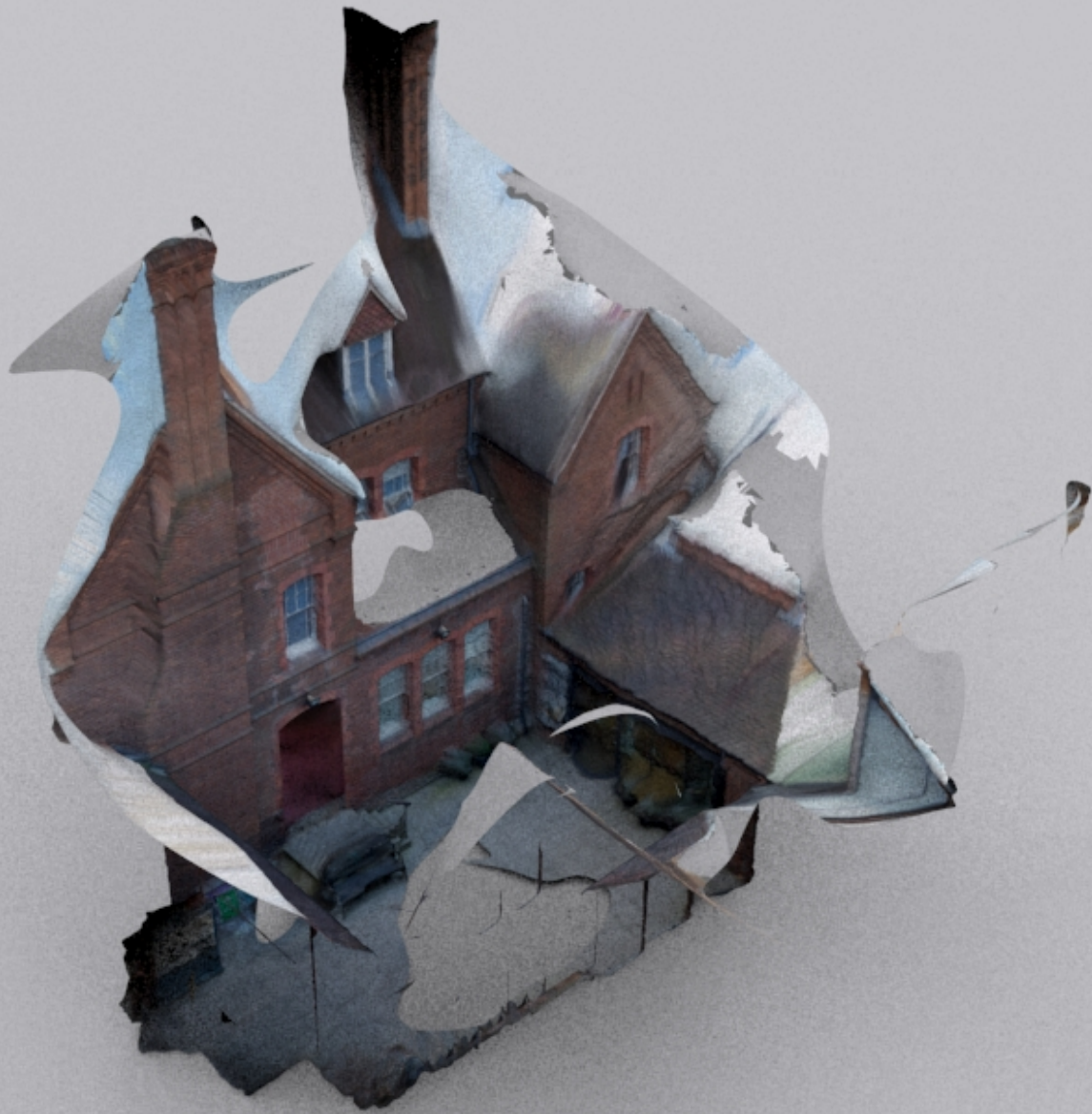
To take the prototype Virtual Museum to three communities (elderly or disabled, teenagers, and MERL volunteers) and gather their responses and ideas.

// Work Required //

// Work Required //

Use 3d scanned data of objects and architecture, supplied by Dr. Ian J. Ewart, to create a create a Virtual Museum in UE4 meeting the aims outlined above.

// Proposed Team Size //

4 Students

// Virtual Museum //

// Driving Machine //
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// Questions? //