CS39440: Major Project

Outline Project Specification

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# **Project Description**

A few reasonably detailed paragraphs explaining what the project is about. You should clearly indicate:

* The main substance of the project
* Those aspects of it that are essential in making it worthwhile
* The end-goals of the project. (summary of deliverable section)

My project is to produce a system capable of producing real time holograms from a camera feed using the pepper’s ghost pyramid technique. The system is planned to be used at the Aberystwyth Science Day held on *<date>*. The hope is to use this project to highlight an interesting technique originally used in stage and theatre productions and show how computer science can adapt this to make an impactful visual display.

The system will take real-time data captured from one, or multiple, cameras, from a staging area which will consist of a black background and appropriate lighting to illuminate the subject. The video feed will then be processed to ensure that the background is black as due to lighting it is likely to be grey and then the feed will be displayed to a large monitor to work with a ghost pyramid of appropriate size. The pyramid is square based, made of Perspex, clear acrylic, or similar and open ended at both the top and bottom. The pyramid is placed on the monitor and the videos reflect through each side of the pyramid creating an illusion of a hologram in the centre.

To make the demonstration more interactive for viewers, the display will also have an accompanying system that allows users to play a charades style game. This would display a topic to act out to the user in the stage and then others viewing the hologram would be able to guess what the activity being performed was. This would require a system capable of taking multiple different string inputs (guesses) from users simultaneously and feedback to the user if their guess is successful. Outline Project Specification

# Proposed Tasks

* Summarize the tasks that will form the major part of your work. For example:
  + If there is lots of research reading to be done you can say so here.
  + If there are coding techniques to learn or APIs to wrestle with, then you can say that too.
* The list of tasks should focus on the major items of work.
* The areas that you work on should result in outputs, some of which will be deliverables that you describe in the following section.

# Project Deliverables

* List all the key outputs that you expect to produce during the project.
* This should normally include (but not limited to):
  + Specified items of working software
  + Any reviews (of technology etc...) that you see as of fundamental importance to the project
  + Documentation for requirements, design and testing
  + The final report.
* Explain these items and highlight when they will be produced
* Consider your process

# Bibliography