HCI

Project Name
HCI and Interfaces in Mobile VR

Project Description:

This project explores how users can better interact with mobile virtual reality experiences. Platforms such as the GearVR have democratized Virtual Reality, however, their control interfaces are often limited. While some extended controllers exist for these platform, adoption has been slow.

Some mobile VR platforms only have the option of a single button for user interaction. In this project you will explore how developers can work with this challenging control-bandwidth, and what impact different control modalities have on player experience.

Furthermore, as mobile VR has limited positional tracking, some users report more cases of cyber sickness than desktop based VR (such as the Vive or Rift). How can developers work with these limitations to reduce cyber sickness?

The student's investigation should align with one of the following open-ended research questions:

1. What are the best practice implications for developers working with limited control-bandwidth interfaces for mobile VR games?

2. How can natural or intuitive interaction be supported by limited control-bandwidth interfaces?

3. Do specific game genera's suit control-bandwidth interfaces for mobile VR.

4. How can the risk of cyber sickness be reduced for mobile VR applications?

Are there any prerequisite skills / courses?
NA

Which degree program is this aimed at? (It can be more than 1)
Computer Games Programming

Number of students you wish to undertake this project
2

Project Name
Project Allocation System

Project Description:
Every year, the University of Lincoln and other institutions, has the difficult task of assigning project supervisors to students. In our case, this means allocating one supervisor each among a few dozen members of staff to over 200 students. There are many solutions that range from random allocation to first-come first-serve setups. They each have their benefits and drawbacks. This project looks at developing a better system that tries to maximize these benefits and minimize the drawbacks. **What you will do:** Research a number of pre-existing solutions, conduct a requirements-gathering study where you find out what stakeholders (students and members of staff) value, and finally design, implement and evaluate a system that addresses the issue.

Are there any prerequisite skills / courses?
Basic programming skills, and (as this is would likely be a web app) some web development knowledge would be beneficial, but this could also be learned as part of the project. An understanding of User-Centred design principles would also be helpful as this at its core an HCI project.

Which degree program is this aimed at? (It can be more than 1)

Computer Science

Number of students you wish to undertake this project
No limit.

Project Name
Dota Plus Plus

Project Description:
In Dota 2, new players are given suggested builds that simplify the process of deciding what items to prioritise buying and what skills to level. Additionally, some of the best builds offer meaningful advice and explanation as to why this item is useful. Last year, Valve introduced Dota Plus which, among other features, gives players dynamic build suggestion that change as the game progresses suggesting items based on your own hero as well as who your opponents are and their builds. While this information is much more powerful, it now lacks the meaningful advice: why should Crystal Maiden focus on buying a Eul's Scepter when the playing against Queen of Pain or Skywrath Mage and when should she use it? This information helps the new players understand the game better and develop their own strategies and tactics for future games, rather than simply know what to build in this game.   What you will do: Design and implement a proof of concept crowd-sourcing tool that allows the members of a Dota 2 community to construct a meaningful advice knowledgebase to help new players not only know what items to buy, but also why. This includes designing the structure of this knowledgebase, the interface, and the tools to support crowd creation and curation of meaningful advice.

Are there any prerequisite skills / courses?
Some web development skills. Knowledge of Dota 2 would be extremely valuable. This project may also be applied to other similar games (e.g. League of Legends).

Which degree program is this aimed at? (It can be more than 1)

Primarily, Games Computing but open to Computer Science Students.

Number of students you wish to undertake this project

No limit.