StudentShapers Recruitment: Calling all students with an interest in Earth Science, Coding, and Virtual Reality

Virtual Reality – Inside the Control Room of Carbon Capture Plant

Bursary:

£330/week (8 full time weeks)

Who should apply:

Students with an aptitude for coding and enthusiasm for creating software, as well as an understanding of SketchUp, and 3D CAD models. We anticipate that students enrolled on programmes in the Department of Chemical Engineering will be best placed to meet these criteria, but all Imperial undergraduates are eligible. Preference will be given to students who are not in their final year.

Campus/Location:

South Kensington, though with scope for remote working in the later stages of the project

Project details:

The project attempts to explore how VR may facilitate training and communication between students and teaching staff. In this project, you will integrate the ViRSE project's multiplayer functionality with the digital twin (3D VR model) of the Control Room of the Carbon Capture Plant. It is an exploratory project aimed to design a multiuser VR experience for familiarising with the inner workings, process flows and the functionality of the Carbon Capture Plant esp. the Control Room. You will be working in partnership with Dr Colin Hale (ChemEng) and Dr Nitesh Bhatia (ChemEng) to design, code and test this system. Please check the following URL to view the current VR implementation of the Control Room of the Carbon Capture Plant without ViRSE multiuser integration. https://www.youtube.com/watch?v=a1rjXk4ERm4

The student undertaking this engagement will gain technical skills and experience in coding (in C#/Unity), and in three-dimensional visualisation. They will also gain experience in collaborative software-development as part of a professional team.

This engagement is part of the ViRSE (Virtual Reality Student Experience) project, which is developing a virtual reality platform to ease the development and deployment of 'multi-player' virtual reality into Imperial's teaching across a range of departments and subjects. ViRSE is built on the Unity game engine, and all ViRSE applications (including this project) are also built within Unity; code is written in the C# programming language. Students will not need to build a VR interface, write rendering code, or concern themselves with networking or administrative issues; these are handled by the ViRSE framework and the Unity engine. The development in this engagement will concentrate on the creation of a three-dimensional 'environment' specific to the project, and creating and testing the code necessary to make it function, and to interface with the ViRSE system.

All ViRSE student shaper engagements will commence with a two-week full time collaborative skill development and training course run by the Interdisciplinary EdTech Lab (IETL), which will provide the necessary grounding in the C# language, object-oriented programming, the Unity engine, and the virtual reality interface. This training will take place July 4th-15th 2022. In subsequent six project weeks the ViRSE student partners will lead on the development of the particular applications within Unity, in collaboration with the academic lead, and with the ViRSE team providing technical support and

advice. These six project-development weeks are flexible in precise timing, but should take place over summer 2022, before the start of Autumn term of the 22/23 academic year.

How to apply:

Applications (300-500 words) should be made via the 'Student Expression of Interest' form on the StudentShapers website (here) or accessed using the above QR code. This will then be distributed directly to the appropriate staff partner.

Deadline: 22nd April 2022

Contact details: Contact Nitesh Bhatia or Colin Hale (Chemical Engineering), n.bhatia@imperial.ac.uk/ c.hale@imperial.ac.uk for further information