



## Project Title:

Unity based development of structural geology tools and implementation of Geo-referencing system in 3D space.

## Introduction:

Imaged Reality is UK start-up in Immersive Technologies. We bring the field to the office or the classroom, in virtual reality and desktop, helping to connect expertise in Geoscience, Mining, Engineering or Academia. [3D Gaia](#), our SaaS Enterprise platform, enables remote and real-time collaboration. The software makes use of 3D models and allows for the visualisation, annotation and interpretation of models and associated images allowing you to gain further insights and different perspectives than those that you would see in real life.

## Description:

Geologists use manual methods in the field to collect geometrical data from geological outcrops such as the dip angle and the strike orientation.

In recent years analysis of 3D outcrop models has been one of the main methods where geologists can work with rocks in the digital world.

Replicating these tools as a digital twin, can speed up the processes of data acquisition and analysis.

The project will require from the candidates to work on the following three areas:

- Implementing a georeferencing system in order for unity to be able to read/translate geographic coordinate system data (latitude – longitude).
- Building a digital tool which will calculate the orientation and dip angle of 3D outcrop surfaces with respect to geographic north using the “3-point solution for dip and strike”.
- Projection of the data using standard stereographic projection methods (equal area stereonet projections).
- API/plugin connector to 3D Gaia system
- Design the user VR experience that is both intuitive and engaging

## Suggested team size and location

3-4 students. Work can be done from CSM campus or elsewhere, connecting remotely to our team in the UK and Japan.

## Skills/Experience for CSM students

Some of the skills that will be leveraged and improved include (but are not limited to):

- C#, .NET, Unity
- UX design
- Version control

- Understanding of Geographic Information Systems
- Development for virtual reality
- User Interface design

## **Intellectual property**

- Requirement to sign an IP Deed document with Imaged Reality