

## Virtual and Augmented Reality Fall 2023

### Assignment 2: Google Cardboard Development

#### Problem 1:

Develop a basic real-time VR system using Unity, Google Cardboard, and your phone. Your scene must have all new assets and not have any of the assets from the sample scene (you may use free assets from other sources). Your scene must also include one interactable object, and a display (text or otherwise) that shows both the frames per second of your program in real time, and the average FPS over the past 1 second.

For reference, you may want to use the tutorial provided by Google

<https://developers.google.com/cardboard/develop/unity/quickstart>

or the one given in class:

[https://docs.google.com/presentation/d/1U2dqpJxHTocQ\\_SfPftdbmHXbtT4SDAg0T\\_6wtf0W3W0/edit](https://docs.google.com/presentation/d/1U2dqpJxHTocQ_SfPftdbmHXbtT4SDAg0T_6wtf0W3W0/edit)

Your task is to:

- 1) Create a Google Cardboard scene in Unity that
  - a) Runs on your phone (2 pts)
  - b) Uses new assets (1 pts)
  - c) Contains an interactable object (2 pts)
  - d) Computes and displays the FPS performance of each frame (5 pts)
  - e) Computes and displays the average FPS over the past 1 second every frame (5 pts)
- 2) Optional (not graded): Create a HeadTracker object and print the pose of the user's head every 1 second  
<https://developers.google.com/cardboard/reference/c/group/head-tracker>

#### Submission Guidelines:

- 1) Submit to Brightspace for grading: a screen recording of your phone while running the Unity project showing all the features of your program, and the .cs file in your Unity project that calculates the FPS values.