

Individual Lab Report 02

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Team C: FlySense

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Work done this week

- Developed a basic holographic display visualising the buttons and a sample map widget.
- Decided that we need a better/relevant AR headset due to the problems with Hololens.

Problems Faced:

- The GUI for 2D applications and 3D applications has vast differences. 3D application making is more like developing games on Unity3D (**fig.1**).
- There are quite a lot of vibrations due to noisy IMU data that needs to be filtered.
- Too many buttons and the screen is cluttered, if buttons are placed far from the player (viewer) then it becomes too small to see.
- Gesture controlling is tough to do, should definitely look at other ways user/system communication.

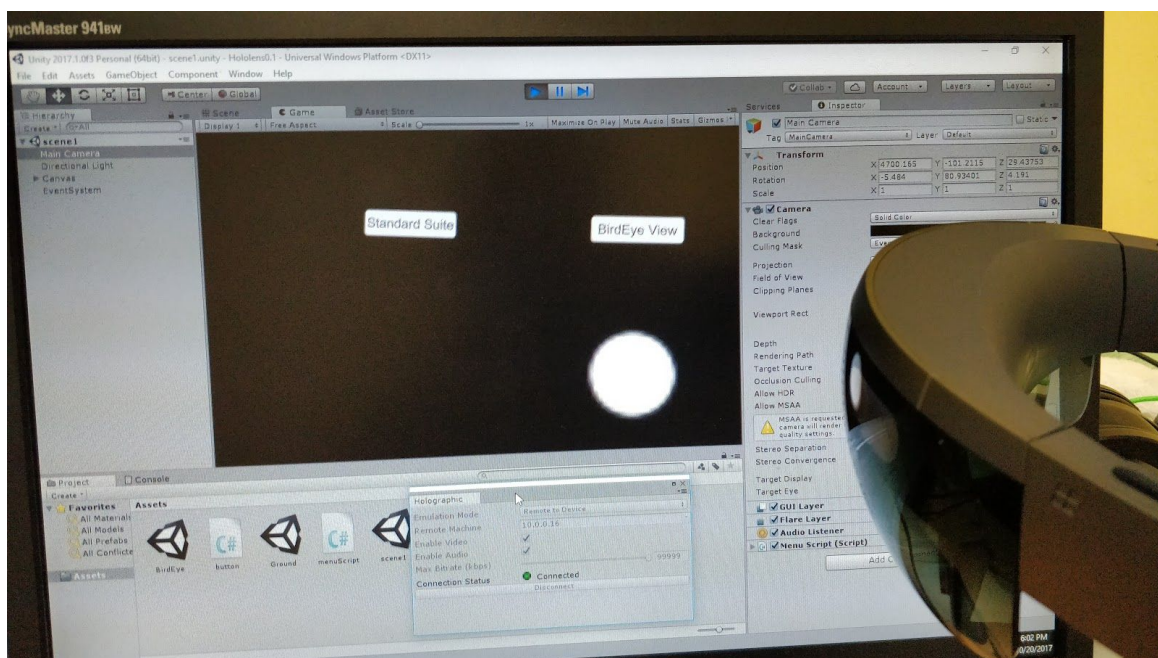


Figure 1. Test Application Developed on Unity3D

How am I planning to solve?:

- Since we do not need to develop holographic 3D applications and also considering the problems with the weight of the Hololens, we decided to test some other AR headsets before finalizing the device.
- We are looking at the Epson BT 300 which has Android SDKs which might make it easier to work with (since I have prior experience with Android).
- We are also looking at Spinx sound recognition system (developed at CMU), this is said to be one of the most robust recognition systems out there.
- Regarding the buttons, we are planning to have a GUI where only two or three buttons are visible at a time to give the user an indication that there are more functionalities that he can control using the voice, but all of them are not going to be brightly visible on the screen at all times.

Milestones for next week (Week 1):

- Set up the Android development environment for the Epson.
- Obtain the Epson BT 300 device (arriving on the 23rd, Tuesday), test some basic applications on it.

Milestones for Week 2:

- Set up the interfacing method (either sound or buttons) and develop basic GUI framework.
- Finalize on how communication between the headset and the onboard computer will take place.
- Decide the protocols and message passing formats between the subsystems.
- If ROSJava, then familiarize with rosjava packages and how to implement them on the headset.