

EE/CprE/SE 491 Weekly Report 7

Group: sddec19-14

Client & Advisor: Danfoss Power Solutions(Radek) / Dr. Alexzander

Team Members:

Omar Abbas - meeting scribe/report manager

Dennis Xu - chief engineer/meeting facilitator

Aaron Michael - chief architect

Jonah Bartz - continuous integration

User Information Augmentation

4/5 - 4/12

Weekly Summary:

This weekly meeting we talked about what will demonstrate in front of the panel for our presentation at the end of the semester. This meant defining our goal and making it clear what the functional and nonfunctional requirements are. We finally agreed that it maybe very difficult to connect the Tobii to the Jetson. The reason for that is that Tobii replied to our request saying they do not support ARM processors, and QEMU and Wine tools may work but seemed to do so slowly. As a result, we decided on an intermediary MCU to transfer the data for us.

Past Week accomplishments:

Omar Abbas:

- Attempted downloading machine learning API Tensorflow for sake of training lane detection, however failed due to unsupported architecture. This may be remedied later we found an equivalent one on NVIDIA's website specifically for a Jetson TX2.
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- Researched Intel Quark MCU which contains x86 architecture suitable for tobii eye tracker as an intermediary device.

Dennis Xu:

- Got a QEMU x86_64 machine working on the Jetson TX2
- Tried to get the tobii working on the QEMU machine
 - Ran into issues with passing the USB device to the qemu machine

Aaron Michael:

- Updated UML diagrams in the project plan to reflect our evolving project plan as options open and close.
- Planned how to create a display to be set to the projector to display on the windshield.

Jonah Bartz:

- Got confirmation from Tobii that they do not support ARM based processors.
- Editing examples from the SDK to meet our requirements in C# with the idea of converting it to C or C++.
- Talked to client about projector and got confirmation to order new intel controller to process the x86 and relay to ARM.

Pending issues:

- Getting a light x86 system for interfacing with the eye tracker
- Learning OpenCV library which will allow us to perform image detection using the TX2.
- Use OpenCV to detect objects in front of the TX2, and use Tobii Eye tracker to determine whether the person saw the object or not.
- Waiting for projector to be delivered

Individual contributions:

Name	Individual Contribution	Hours since the last report	Hours Cumulative
Omar Abbas	Tensorflow, Intel Quark	3	28
Jonah Bartz	Converstaing with Tobii and Client about possible sultions. Decided with using an itermited controller. Developing tobii software in c#.	6	29
Dennix Xu	Worked on getting the tobii eye tracker to work on the Jetson via a QEMU machine.	7	32
Aaron Michael	Updated UML diagrams.	3	26

Plans for upcoming week:

Getting the GUI started, or at least the base outline finished. We also want to have a projector picked out and ordered by next week. We are also going to make our presentation and figure

out the different parts we are going to present. We want to have a solid foundation for the GUI going into the end of the semester.