

EE/CprE/SE 491 WEEKLY REPORT 07 03/19/2018 – 03/25/2018

Group number: 18

Project title: *Deep Learning with Radar for Object Recognition and Tracking*

Client &/Advisor: Michael Olson (Danfoss) and Dr. Wang

Team Members/Role:

Tucker Creger - Project Manager

Eric Bishop - Software Developer

Kellen O'Connor - Deep Learning Architect

Clayton White - Hardware Design Engineer

Mitch Hagar - Radar System Lead

Nihaal Sitaraman - Hardware Developer

o Weekly Summary

This week we worked on following up on open items from before spring break. We also worked on starting to established new action items for the rest of the semester and next semester. We updated our Gantt chart, got the NVIDIA TX2 ordered and received it. We also were able to get our RADAR solution approved by our client and we expect to have that in our possession very soon.

o Past week accomplishments

- Prepared a document which would outline a couple RADAR solutions
 - Presented this document to the client and advisor (Pending approval on RADAR)
- Eric and Nihaal made a new Gantt chart for this semester and for next semester
- Nihaal made a more comprehensive block diagram
 - Tucker will add minor details and provide comments/edits
- Tucker picked up the Jetson TX2.
- Kellen prototyped a simple object detection network which may be useful for multi-object detection.

o Pending issues

The major pending issues are determining the additional hardware we need to complete our CAN bus to use the RADAR and Jetson TX2 together. Also we need to get the HDMI output working on the TX2.

o Individual contributions

Name	Accomplishments	Hours This Week	Hours Cumulative
Tucker Creger	This week I worked on picking up our Jetson TX2 from ETG. I also worked on getting an updated quote from a supplier for our client to order our radar system.	6.5	76
Eric Bishop	Looked at the Jetson TX2 and looked at the start up and various different parts and connectors that we would need to make the jetson work with our example tractor.	5	46
Kellen O'Connor	I received the Jetson from Nihaal and began trying a couple different methods to access the Jetson over a network. Because ISU's network is not ideal for using SSH, I am still looking into more options. I also continued prototyping an object detection network that discretizes the output space rather than predicting a bounding box (single shot detector).	5	52.5
Clayton White	Started looking up different types of efficient boost converters to supply power to the Delphi radar.	4	40
Mitch Hagar	While the other guys	5	48

	were working on our tech that we received, I prepared an excel sheet comparing pros and cons of radar, lidar, and a camera.		
Nihaal Sitaraman	We got our SoC (Jetson TX2) and I began trying to get it to work. I was unsuccessful and have since handed the unit over to Kellen (issue with HDMI output). I also made a new and more comprehensive block diagram for our system. I also looked for various camera solutions which would be compatible with our RADAR.	7	58

o Plan for coming week

Next week we will get our camera solutions decided and try to get a proposal together. We also hope to be able to get our RADAR so we can begin testing. We also hope that the TX2 can begin working properly.

o Summary of weekly advisor meeting

We did not have one as our advisor had a prior commitment.