EE/CprE/SE 491 WEEKLY REPORT 09 04/02/2018 – 04/09/2018
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 getting out wiring harness figured out. We contacted Danfoss in ames and Danfoss in Minnesota to see if they had the connectors and tools we needed. After getting an answer back, we also contacted ETG to try and see if they had some of these parts. We are still waiting to hear back on that. We also looked into ordering a CAN bus transceiver. This device will translate the Tx and Rx signals (transmit and receive signals) into CAN Hi and CAN Lo to be able to communicate between the SoC and the vehicle. We got the Jetson display drivers working, meaning we can use it with a display and implement our Python code on it.

o **Past week accomplishments**
   ● Mitch started on the wiring diagram
   ● Mitch working on block diagram in AUTOCAD - Tucker to work with.
   ● Clayton got the details of the PCB figured out and can start to simulate it
       ○ Nihaal will be assisting with the simulation
   ● Nihaal made another version of the block diagram with specific i/o's
       ○ Tucker has made a high-level, low detail version of this as well
   ● Kellen got the Jetson working with a display and installed OpenCV on it, making it a usable platform for deploying our deep learning model.

o **Pending issues**
We also need to finalize and order our camera. We also need to finish our wiring harness design and order parts. We have to also get the PCB designed for the CAN bus. Once this is completed we hope to begin testing.

o **Individual contributions**

Name	Accomplishments	Hours This Week	Hours Cumulative
Tucker Creger	This week I mainly worked on our wiring harness design. I worked on creating a rough draft and a bill of materials. I also worked on finding suppliers for parts and communicating with ETG.	7.5	92.5
Eric Bishop	This week I helped update our proper Gantt chart and continued to figure out the Jetson TX2. Also started to research cameras that would work best with our system, yet still cost relatively cheap.	7	59
Kellen O'Connor	This week I spent a long time getting the TX2 up and running. I was successful getting it working with an HDMI output. In the process of doing so, I familiarized myself with the process to flash the Jetson with an updating operating system through JetPack. I also installed OpenCV for Python 2.7, which is a different process than for other operating systems/computers. The version of Ubuntu the Jetson uses is	13	75.5

	slightly different than standard Ubuntu 16.04, meaning installation of OpenCV is different.		
Clayton White	Researched the functions and operations of the CAN controller integrated circuit we will be receiving soon. Began planning a prototyping strategy for the IC so we can test it once it arrives. After testing, Nihaal and I will begin the PCB design.	7	53
Mitch Hagar	This week I helped Nihaal plan out the wiring diagram. I went through lists of cameras and chose the top 10. I put these in an excel sheet with the functionality/cost of each camera. From there I narrowed it down to 6 cameras.. The team and I stood by as we watched Kellen boot up the TX2 for the first time.	5	59
Nihaal Sitaraman	Improved upon diagrams, re-uploaded Gantt chart with Eric after making major edits and additions. Discussed wiring specs with the team and planned out wiring diagram with Mitch.	5	69

o **Plan for coming week**

This week we will finish our design doc, finish the project plan, finish ordering parts, and will begin fully testing the radar and TX2. Our next step will also be to prepare for our presentation.

o **Summary of weekly advisor meeting**

Our advisor discussed our Design Doc V2 with us during the meeting. We also talked about some changes to the block diagram.