CprE/SE 491 Weekly Report 7

Dates: 3/2/2017 - 3/8/2017

Dec1709 - ALVINN
Autonomous Vehicle Mission Processor with Machine Learning

Team Leaders:	Bijan Choobineh	**Advisors:**	Dr. Jones & Dr. Zambreno
	Darren Davis		
Communicator:	Tracy La Van	**Client:**	Josh Bertram - Rockwell Collins
Key Concept Holders:	Jesse Luedtke		
	David Schott	**Email:**	dec1709@iastate.edu
Webmaster:	Robert Stemig		alvinn@iastate.edu

Weekly Summary:

Most of the team had midterms but tried to forge ahead anyway. The team worked towards getting paperwork done for Rockwell-Collins's decision to retain intellectual property. Jesse was able to secure the boards for the project and placed them in Durham 311 Lab. The website is up and running and has almost all documents placed. Design document version 1 has been completed.

Past Week Accomplishments:

- **As a Group:** Worked on design document version 1.

- **Bijan Choobineh:** Due to midterms was only able to work on the design document.

- **Darren Davis:** Downloaded Anaconda and OpenCV. Figured out how to import, convert to gray, and display a picture. Then played around with 4 different blurring techniques and a couple different threshold techniques to compare and contrast output. Started looking into feature detection techniques but midterms kept me from getting too far with it.

- **Tracy La Van:** Worked on the links Dr. Jones sent out recently - reading and viewing information.

- **Jesse Luedtke:** Shifted focus from TensorFlow to OpenCV. Researched basic computer vision algorithms implemented in OpenCV.

- **David Schott:** Worked on design document.

- **Robert Stemig:** OpenCV setup/examples, working on the design document, due to midterms wasn't able to get much in this week

Pending Issues:

- **Bijan Choobineh**: With Midterms complete, will need to continue working with openCV to detect objects and continue to setup my environment.

Plan for Coming Week:
- **As a Group:** Possibly meet on campus for a day or two during spring break.

- **Bijan Choobineh:** Finishing up environment setup for OpenCV and be able to do object detection.

- **Darren Davis:** Try and compare some different feature detection techniques but it is spring break.

- **Tracy La Van:** Will work on setting up software on my computer for the project, play around with said software, and continue any education still needed up to this point.

- **Jesse Luedtke:** Try to practice more OpenCV during spring break.

- **David Schott:** Same as last week. OpenCV / Tensorflow. Specifically, I'd like to explore to what extent feature extraction using OpenCV is needed in order to feed data in a Tensorflow-compliant way.

- **Robert Stemig:** Unfortunately, will be out of town with family of course of spring break.

Individual contributions:

NAME	Individual Contributions	Hours This Week	Cumulative Hours
Bijan C.	Design Document	2.0	32.5
Darren D.	Blurring and threshold techniques	3.0	35.0
Tracy L.	Design Document, Materials from Dr. Jones	5.0	28.5
Jesse L.	OpenCV	2.0	31.0
David S.	Design doc	2.0	19.0
Robert S.	openCV/design doc	3.0	29.0
	Totals:	17.0	175.0

Comments and Extended Discussion:
TK/X 1 Boards are in Durham 311 Lab

Summary of Weekly Team Meeting (3/7/2017):
- Present: Bijan Choobineh, Darren Davis, Tracy La Van, Jesse Luedtke, Robert Stemig
- Absent: David Schott
- No Advisor Meeting
  - Bijan will cancel
- No Client Meeting
  - Bijan will cancel
- Intellectual Property Forms:
  - Track down David for signature
  - Track down an advisor for signature
  - Email Josh and arrange drop off (in person or scanned & emailed)
  - Robert will do this
- Assign Design Doc
  - Everyone needs to pick a couple of TODO bullet points on the design doc
    - Put your name next to the bullet (multiple people can do one bullet point)
    - Erase bullet point when finished (so we know you're done working on it)
  - Need to be completed by Thursday so there's enough time to submit on Friday
- Jesse needs to pick up boards
  - TK/X 1 Boards are in Durham 311 Lab

Summary of Weekly Advisor Meeting (3/2/2017):
- Present: Dr. Jones, Dr. Zambreno, Bijan Choobineh, Darren Davis, Jesse Luedtke, David Schott, Robert Stemig
- Absent: Tracy La Van
- What is a feature defined as: vector (maybe go more in depth)
- HOG is complicated, use openCV existing libraries to save time
- Send email about descriptors to jones,
- Start feeding info on laptops now while building neural network
- Storing boards in lab in durham so advisors and team have access
- Start considering displaying data, flexible gui(opencv) for demo considerations
- Simulator data live vs recorded data
- Send out project plan to advisors
- Follow 491 requirements for design documents