

# CprE/SE 491 Weekly Report 10

Dates: 3/23/2017 - 3/29/2017

## Dec1709 - ALVINN

### Autonomous Vehicle Mission Processor with Machine Learning

<b>Team Leaders:</b>	Bijan Choobineh Darren Davis	<b>Advisors:</b>	Dr. Jones & Dr. Zambreno
<b>Communicator:</b>	Tracy La Van	<b>Client:</b>	Josh Bertram - Rockwell Collins
<b>Key Concept Holders:</b>	Jesse Luedtke David Schott	<b>Email:</b>	<a href="mailto:dec1709@iastate.edu">dec1709@iastate.edu</a> <a href="mailto:alvinn@iastate.edu">alvinn@iastate.edu</a>
<b>Webmaster:</b>	Robert Stemig		

#### Weekly Summary:

As a team, the team mostly focused on revising the path the project plan would take. Each section of the project plan was broken down into pieces and assigned to a group member - each section will be revised according to what was discussed in the team meeting.

Individually, team members worked on OpenCV, Caffee, and other software to continue education and testing to move forward.

#### Past Week Accomplishments:

- **Bijan Choobineh:** Continuing work on OpenCV with object detection as well as updated project
- **Darren Davis:** Working with OpenCV ORB for feature detection. Worked with brute force and FLANN matching techniques. Started looking into homography. Project plan version 2.
- **Tracy La Van:** Unable to work on 491 besides working on the Project Plan v2, 5 min presentation brainstorm, and Weekly Report due to preparation for WiCyS 2017 Conference.
- **Jesse Luedtke:** Worked on feature mapping in OpenCV and starting building neural networks in Caffee
- **David Schott:** Found a tutorial on how to train my own haar cascade classifier using `opencv_createsamples` command. Haven't been able to look into it in more depth yet.
- **Robert Stemig:** Mainly spent time in openCV feature extension and project plan version two.

#### Pending Issues:

- **As a Group:** N/A

#### Plan for Coming Week:

- **As a Group:** Complete Project Plan v2
- **Bijan Choobineh:** Try to get a working demo with an aircraft for OpenCV object detection

- **Darren Davis:** Starting design document version 2. If time allows continue with matching an X in OpenCV.
- **Tracy La Van:** Will work on OpenCV and possibly Caffe.
- **Jesse Luedtke:** More Caffe and OpenCV.
- **David Schott:** Create my own haar cascade classifier to identify crosses using the tutorial to guide me.
- **Robert Stemig:** Get familiar with Caffe and working out some examples/tutorials.

**Individual contributions:**

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours This Week</u>	<u>Cumulative Hours</u>
Bijan C.	Project Plan, OpenCV	3.0	43.5
Darren D.	OpenCV object matching, project plan	6.0	50.0
Tracy L.	Project Plan v2, Weekly Report, 5 min brainstorm	5.0	39.5
Jesse L.	OpenCV and Caffe	5.0	45.0
David S.	OpenCV	2.0	30.0
Robert S.	Project Plan, OpenCV	2.0	36.0
Totals:		23.0	244.0

**Summary of Weekly Advisor Meeting & Client Meeting (3/23/2017):**

- Present: Drs. Jones & Zambreno, Josh Bertram, Bijan Choobineh, Darren Davis, Tracy La Van, Jesse Luedtke, David Schott, Robert Stemig
- Met with advisors, client and Cary to discuss IP forms

**Summary of Weekly Team Meeting (3/29/2017):**

- Present: Bijan Choobineh, Darren Davis, Tracy La Van, Jesse Luedtke, David Schott, Robert Stemig
- Project Plan v2
  - What needs changed and who is doing which parts
  - Who will submit the final v2 this weekend (Tracy will be at a conference and cannot)
  - See [Google Doc](#) for more details
- With one month left in the semester:
  - Begin thinking about Design Doc v2 and Project Plan v3
  - Begin thinking about the final 491 presentation

- Need to start thinking about how we will break apart the phases of the project and how to assign the parts to people (more in-depth than we have already done).