

# CprE/SE 491 Weekly Report 26

Dates: 11/23/2017 - 11/29/2017

## 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:

The team continued working on preparing for the final course requirements: poster, demo, final presentation, and final report.

#### Past Week Accomplishments:

- **Bijan Choobineh:** Finalize documents, poster. Finalize testing/analytics.
- **Darren Davis:** Processing test data into usable tables. Final paperwork.
- **Tracy La Van:** Worked on the final report and testing data statistics.
- **Jesse Luedtke:** Worked on the final report.
- **David Schott:** Worked on generating the spreadsheet for video and the testing section of the poster.
- **Robert Stemig:** Worked on poster draft for upcoming meeting with Goce.

#### Pending Issues:

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

#### Plan for Coming Week:

- **As a Group:** Begin preparing for the final presentation and demo.
- **Bijan Choobineh, David Schott, & Robert Stemig:** Will finalize changes on the poster.
- **Darren Davis, Tracy La Van, & Jesse Luedtke:** Will finalize changes on the final report.

**Individual contributions:**

<b><u>NAME</u></b>	<b><u>Individual Contributions</u></b>	<b><u>Hours This Week</u></b>	<b><u>Cumulative Hours</u></b>
Bijan C.	Testing/Poster	5.0	53.0
Darren D.	Processing test results and final paperwork	7.5	119.5
Tracy L.	Final report, testing data, weekly report	15.0	92.0
Jesse L.	Final report	13.0	86.0
David S.	Poster, video testing, processing test results	7.0	95.0
Robert S.	Poster	3.0	59.0
Totals:		50.5	504.5

**Summary of Weekly Advisor Meeting (11/24/2017):**Zoom: <https://zoom.us/j/7680301181>

- No meeting due to Thanksgiving Break

**Summary of Weekly Client Meeting (11/28/2017):**Zoom: <https://zoom.us/j/757821200>

- Cancelled due to no new information to report

**Summary of Weekly Team Meeting (11/28/2017):**Zoom: <https://zoom.us/j/393292249>

- Absent: David S.
- Weekly Reports
  - Several people have not completed WR23-26. Please do so soon.
- Data Collection Methods
  - Tracy believes some of the methods used are not valid for what we set forth as goals for the project
  - Darren - how were 0/1s collected? It's a 1 even if it's only 10%
  - David - is that Mean Confidence for ONLY true positives?
    - Yes, to demonstrate the the average confidence was higher for airplanes as opposed to other objects (anomalies) found in images. That being said, our testing data is very limited and probably biased since we have a lot of images of airplanes
  - Are we going with DetectNet's second rate of confidence? Yes
  - Consistency issue - are we viewing MobileNet as one or three networks?
    - 300x300 compared to other networks; others are just image size comparison against MobileNet only
  - Note: Based on answer above, poster information may need modified

- Works Cited - who used which sources and where?
- Ideas for info:
  - System constraints (economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability)
    - Fps
    - Accuracy
    - What can detect
    - Physical limitation of board
    - RC drones
  - System assumptions
    - Aeronautical
    - TX1 limitations
    - Development board, not board for environment
    - Not for household use
  - System limitations
    - Tests not performed
    - Schedule limitations
    - Needing HPC access for training
    - Memory
  - Challenges
    - Streaming errors - DetectNet (confidence)
    - Training prior to HPC access
    - Memory
- Poster
  - Cannot use images we did not create
  - Possibly too much text - can this be cleaned up? Maybe remove unnecessary dependent clauses?
  - Various capitalization, punctuation, & spelling issues
  - Who will submit it to printing services? - Ask Goce about this
- Final Presentation / PowerPoint
  - When to meet to discuss PowerPoint - Thursday 8pm (work on your part over weekend)
  - When to meet to practice - Tues/Wed?
  - **Final Presentation: Thurs, Dec 7th 9-9:30am in Coover 3043**