

**sdmay18-03: Use of imaging devices and machine learning software to assist in autonomous veh**  
 Week 3 Report  
 September 13 - September 19

### Team Members

John — *Communications Lead*  
 Souparni — *Meeting Facilitator*  
 Fahmida — *Tester*  
 Eric — *Webmaster*  
 Bowen — *Hardware Maintainer*  
 Ashley — *Document Manager*

### Summary of Progress this Report

At the start of this work period, we got most of our development environment setup, including running the test script for our DarkNet neural net. We explored the DarkNet research paper and understood why this neural network was picked by SmartAg.

Additionally, we met with Dr. Stoytchev. He raised a number of concerns about the scope and feasibility of of this project that we had not previously considered, so much of the week was devoted to patching up the holes in this project.

Some of us continued research on the darkNet neural net and tested it with other images.

### Pending Issues

Address the feasibility and scope of our current project.

Work out hardware specifications with client.

### Plans for Upcoming Reporting Period

We will primarily look into ways to make the project more feasible as well as explore some possible alternatives. In addition, we will begin working on our project plan, which should provide us with a structured way to define a realistic scope for this project.

We also plan on reading the DarkNet research paper thoroughly to understand it better.

Research other neural nets that may perform even better than DarkNet.

### Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
John	Set up darknet neural net locally, began thinking about narrowing down scope or other possible projects. Collaborated with Souparni to come up with new project plans that may be feasible for implementing. Narrowed down the basic functionalities of the project plan after talking with Dr. Stoytchev.	6.5	17.5

Souparni	Set up darknet neural net locally. Collaborated with John to narrow down scope of our project as well as research and shortlist other projects that can be implemented. Assisted team in listing down basic functionalities of project after talking with Dr. Stoytchev.	6.5	17.5
Fahmida	Setup anaconda environment on my laptop and ran into issues while trying to setup darknet locally due to environment.yml file in the darknet repository had some dependencies having dependencies that are only available in linux environment. I removed those dependencies and made a new environment.yml file which I shared with the rest of group .I eventually succeeded in setting up DarkNet neural net locally.	6	17
Eric	Tried to set up DarkNet neural net locally, began thinking about narrowing down scope or other possible projects after meeting with Dr. Stoytchev. Tried to update website.	5	14
Bowen	Set up darknet neural net locally. Experimented further with OpenCV for image detection. Used techniques learned in my deep learning class to work with the darkNet neural net we are using. Tested the neural net with other images.	6	16
Ashley	Set up DarkNet neural net locally, began thinking about narrowing down scope or other possible projects after meeting with Dr. Stoytchev.	5	15.5

### References:

Redmon, Joseph. Divvala, Santosh. Girshick, Ross. Farhadi, Ali. You Only Look Once: Unified, Real-time Object Detection. University of Washington, Allen Institute for AI, Facebook AI Research. 13 September, 2017.