

SDMAY18-37 - System and app for managing general faculty/staff parking on ISU campus  
Advisor: Ahmed E. Kamal

Donavan Brooks: Backend Lead  
Derrick Lockwood: Team Lead  
Joseph Krajcir: Quality Assurance  
John Ingwersen: Mobile Master  
Riley Snyder: Webmaster  
Mason Schreck: Communications Lead

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**Weekly Summary:**

- Met with the project sponsor/client to ascertain the scope and required result of the project.
- Assigned roles to team members.
- Played around with Darknet YOLO object detection and began discussing preliminary architecture.

**Past Week Accomplishments:**

Donavan Brooks: Learned more about YOLO and researched similar projects  
Derrick Lockwood: Created a local CNN (Connected Neural Network) using a library called tensorflow.  
Joseph Krajcir: Used Doodle scheduling web app to establish best times to meet for client and team members.  
John Ingwersen: Selected mobile options and began designing initial prototype  
Riley Snyder: Made website navigation possible. Started working on style to be able to present all our work in a unified manner.  
Mason Schreck: Configured YOLO and began to run test images against the neural network

**Pending Issues:**

Donavan Brooks: Better narrow down dates and deliverables for Gantt Chart  
Derrick Lockwood: Figuring out which object detection method we will be using to detect cars location.  
Joseph Krajcir: None currently.  
John Ingwersen: Template application. Establish Firebase server and mobile connection to this.  
Riley Snyder: None.  
Mason Schreck: None

**Individual Contributions:**

Name	Individual Contributions	Hours This Week	Hours Cumulative

Donavan Brooks	Began laying out Gantt chart, as well as learning about technologies that we will be using for the project.	2	8
Derrick Lockwood	Design work on object detection and route we are going to use	6	15
Joseph Krajcir	Learnt about the possible technologies our team might use for the project such as Tensorflow and Firebase.	2	8
John Ingwersen	Looked at different mobile and Google Firebase options.	3	9
Riley Snyder	Made website links functional and made format for uploading docs and reports.	2	8
Mason Schreck	Worked with object detection and researched different neural network solutions and similar problems solved	3	10

**Comments and extended discussion:**

**Plan for coming week:**

Donavan Brooks: Establish more definite dates for milestones and deliverables.

Derrick Lockwood: Working to modify CNN to detect whether a car is in the image or not.

Joseph Krajcir: Further delve into Firebase. Survey faculty parking lots.

John Ingwersen: iOS application with Firebase connectivity showing a test parking lot.

Riley Snyder: Finish website, have Team Info & homepage done.

Mason Schreck: Android template application with Firebase connectivity. Raspberry Pi and camera communication.

**Summary of weekly advisor meeting:**

- **Potentials device communication pitfalls**
- **Multiple camera surveillance of a single lot**
- **Multiple lots to prototype**
- **Type of camera needed (including definition)**
- **Pre-processing device versus backend processing**
- **Architectural decisions**
- **Parking lot image parsing schematics (single stall images, sectors, whole lot at once)**