COMP 4102A Term Project Proposal
Client Parking lot assistant

Phillip AMANYA (101030494)

Klaus CUMANI (101032429)

Mohamed CAMARA (101028735)

Devin JN PIERRE (100869993)

Summary: Provide a solution to small businesses with parking lots to better help them manage and secure their parking lots by providing a software capable of detecting vacant parking spots and planning a navigation route to the nearest parking spot to the entrance.

Background: There already exists a parking lot software called intuVision® Parking. They offer a solution to aid businesses running a parking lot with special features like pedestrian detection and detecting parked cars in the loading area. Our solution differs as it would be a customer solution something that they interact with at the entrance when collecting their parking tickets. Possibly allowing customers to choose an available parking spot and visually aiding them to the parking spot.

Goals and Deliverables:

- Set up joint Github account
- Obtain parking lot videos to test our functions on
- Get the software to detect the parking lots
- Get the software to detect cars and moving objects in the lot
- Get the software to detect available parking spots
- Have the software translate that into a visual map for the clients to see
- Add the ability to map out the shortest route for the client.

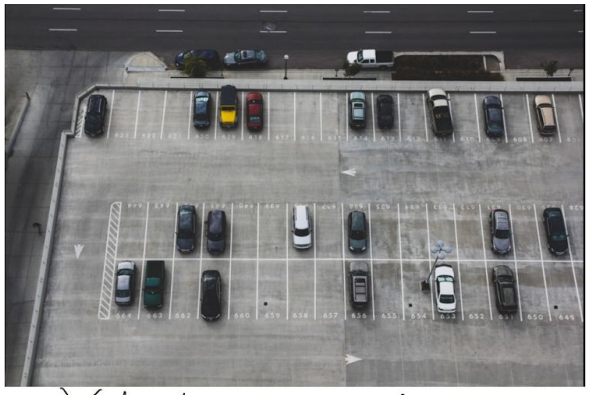
Weekly Schedule

Timeline	Task
Feb 01 - Feb 08	Research/test for software functionality that can aid development , Obtain a camera or use existing parking lot videos
Feb 09 - Feb 16	Get the camera up and running being able to detect and see the parking lot
Feb 17 - Feb 24	Get the camera to be able to detect and track cars stationary and moving in the parking lot
Feb 25 - Mar 03	Gain the ability to detect between available parking spots
Mar 04 - Mar 11	Have the software create a visual map of the parking spot with green spots vacant and red spots not
Mar 12 - Mar 19	Have the software map out the shortest route
Mar 20 - Mar 27	Fix bugs
Mar 28 - Apr 04	Finalize code
Apr 05 - Apr 10	Set up a demonstration for the class

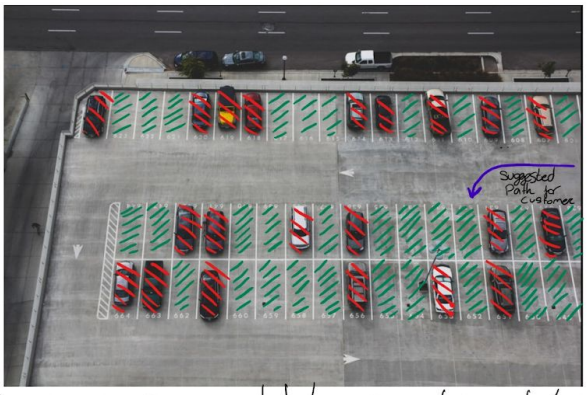
Challenges we may face while developing this project:

- Creating an algorithm that will be able to recognize empty parking spots. Using pre existing functions such as Object Detection and Video Analysis from OpenCV.
- Developing code that will provide customers with an easy route to an empty parking spot, close to the entrance of their destination.
- Developing software that will work with multiple platforms as different parking lots will have different software.

With this project we are hoping to get a better understanding on topics such as detecting backgrounds,foregrounds and moving objects. Also, being able to create software that will be universal. We will also gain some experience in using data from video footage to achieve our goals.



1) Take live image of a parking lot →



2) Process available parking lots and provide a path for costumer