Homework 6: Project Prototype
Traffic Tracker
18799-K Cognitive Video
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Prototype Description

We want to use Professor Cai's live camera data to figure out the number of cars on the road in real time aka detect the traffic. We have access to 200 cameras of live traffic flow that we can take advantage of. With this visual information, we want to process it to notify people about the live traffic flow via their mobile device. Our goal is to create an interface which allows a user to pick up their phone, pick an area, and easily see how busy that area is at the given time. We are hoping to create this on a mobile platform. We are striving for accuracy, timeliness and want to make it easy to use for our clients.

Key Results

We have successfully gotten a demo running - OpenCV on Xcode. The demo accurately counts the number of cars driving by and it is mostly real time (the lag is very minimal). The main delay is in the traffic cam updating the camera; it does so every few seconds. However, this data is good enough for live update of the traffic. For our demo, we are not pulling from the live traffic cam website. Instead, we have a test.mp4 video of just traffic going by. We have code that runs opencv and background subtraction against this test video, showing parts where the cars have travelled by, and doing box bounding on the cars moving by. We're hoping to use the already written code to also count the number of cars on the highway for each image pulled from the website.

Our main obstacle right now is the web server; we are getting errors when running the web server and are trying to trace down where these errors are coming from. We are hoping the original writer of the code will respond with answers to our questions. But in the meantime, we are trying to tackle this issue.

Data Source

For the sources for our project, we used a prior project from Professor Cai's previous class. Matt Sebek had written the OpenCV code for the framework of the car detection. He also wrote a simple server code that displayed a user interface for the traffic flow. Our goal is to take advantage of this code and make it more suitable and convenient for users. Another useful resource is the footage for the traffic cameras. We are using curl to access the image from the site:
http://www.dot.state.pa.us/penndot/districts/district11.nsf/Web%20Cameras?OpenPage