Abstract

Autospots is a parking assistance system that helps users find available parking spaces. Using cameras placed in parking lots, we process images and use computer vision to successfully find open parking spaces. Users can then be navigated to near by parking lots via the mobile application.

Features

- Auto-detection of open parking spots
- Mobile App that finds and navigates to open parking spaces
- View lot images with highlighted open spots
- Setup your own parking lot to be hooked into our system via our website
- Parking lot statistics

Computer Vision

Our computer vision code uses Darknet image recognition techniques as well as classic computer vision algorithms. We have improved on these techniques by extending the code to work on parking lots, and improving the accuracy of vehicle detection by implementing a voting system on the techniques so we can weigh the more accurate algorithms to give us better results.

Mobile Application

Once your location has been acquired, you are assigned a spot and directed to it. You can even start the navigation to the parking lot if you’re far away and headed that direction. The app will keep an eye on your location and assign you a spot once you’re close enough to the lot.

System Overview

- Cameras are set-up facing parking lots
- Users add camera feeds using our website
- Images from camera feeds are processed
- Back-end server is updated with current parking availability
- Mobile app is assigned a parking location

Website

We have founded Autospots.org to allow users to setup their own parking lot to use with our system. Users need to link their camera feed, define parking boundaries, and input the GPS coordinates for the parking lot. Our system will take care of the rest! We have created a detailed tutorial to show users how it is to be done.