# Vehicle Detection Machine Learning Nanodegree Capstone Project Report

## Overview

A key problem for self-driving cars is the detection of other vehicles on the road. This kind of object detection traditionally has been done with proximity sensors like radars and LIDARS. With machine learning and computer vision, vehicle detection can also be done using cameras. The basic approach is to identify visual features such as color gradients, edges, contrasts, etc. that distinguishes vehicles from the roads and the surrounding scenery, and then use supervised learning to classify feature sets from various regions in a camera image as vehicles or not. The image below shows several cars detected in a camera image.

Source: Udacity Self-Driving Car Vehicle Detection and Tracking Project
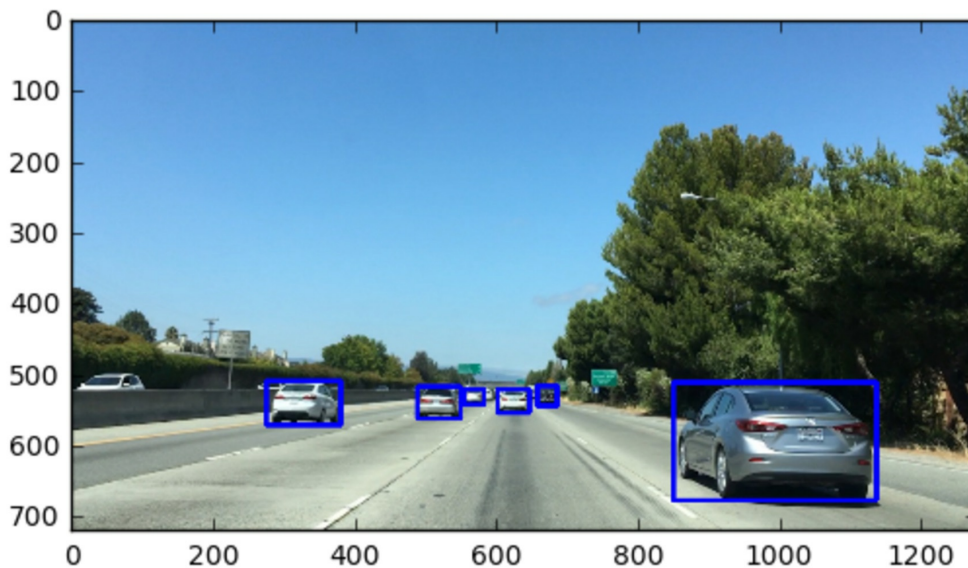


Even within this machine learning approach, there are several distinct methods to detect vehicles. With deep learning