Sameer Khan

Allen Reed

November 8, 2022

Vehicle and Pedestrian Object Detection

Abstract:

In this project, we plan to create a perception system that will identify people and different types of vehicles from various images taken near or of a road and mark them on the image. This would be useful in many different applications including autonomous driving, pedestrian safety, big data, and many other fields. In this project, a convolution neural network that learns from the training set of images would need to be created, most likely using back propagation as its method of learning. In total, we hope to identify people, normal cars, trucks, motorcycles, and bikes giving me 5 different classes to categorize into. As a final test, we hope to be able to run a video through the network and identify, in real time, the passing of these objects and possible use them to calculate some metrics about the area the video is taken in. We will also take this time to try and implement this in Python using TensorFlow or another tool to gain knowledge with that tool. We will both be collaborating on creating the neural network, finding test data, and debugging errors with the code.