Project name: Traffic regulation using traffic-light-mounted cameras

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Abstract

This project deals with information gathering and statistics about the characteristics and behavior of vehicle movement through a traffic-light-controlled intersection, for adjusting the traffic light timing to the traffic passing through the junction it is stationed in. For this purpose, a camera placed on the traffic light post and pointed at the junction is used.

Thereby, an efficient, simple method of analyzing the traffic in the intersection is obtained. In the first stage of the algorithm's operation, a motion estimation process is applied to identify areas of the input video in which there is motion, and the directions of motion in these areas. After that, the algorithm performs identification of the lanes in the video. In the second stage, the algorithm analyzes the traffic load in every lane, by identifying the vehicles in the video received from the camera, and produces load percentage for every lane as output.
Some results

See demo at: https://www.youtube.com/watch?v=YBrewotqyek