Multimodal / Multiclass Traffic Signal Control in a Connected Vehicle Environment

Research Problem

This research seeks to adaptively control the traffic signals based on the data acquired from connected vehicles (Fig. 1).

Research Methodology

The methodology of this research is shown in Fig. 2. Based on this algorithm, at the outset, the connected vehicle data is utilized in an estimation algorithm to determine the traffic situation in a network of intersections. Then the results of the estimation algorithms is used in an optimization problem to determine the optimal traffic signal plan of all intersections in the network.

Results

Results show that the proposed signal control algorithm outperforms an actuated traffic signal plan for various percentages of connected vehicles for a variety of traffic indexes.

More Information

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