Quantifying the Impact of On-Street Parking Information on Congestion Mitigation

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Introduction

Similar to the Advanced Traveler Information Systems (ATISs) that have been used widely to diminish congestion in urban areas, information about the availability of on-street parking is progressively significant as the additional time spent cruising for a space adds to congestion. Such detailed and variable levels of parking information are becoming more freely available to the travelers with the assistance of mobile apps and sensing technologies.

In this study, the research team proposes an innovative method that uses on-street signs as well as mobile apps to provide accurate on-street parking availability information, using parking meter data from a pilot study in Washington, DC.

Goals and Objectives

- To develop an innovative method to provide accurate on-street parking availability information by utilizing DC Department of Transportation (DDOT) parking meter information
- To quantify the effect of parking availability information on drivers’ behavior

Methodology

A realistic network, very similar to the study area, with signs showing the available parking will be created in the driving simulator owned by Morgan State University. This network will be calibrated and validated using field-collected data from DDOT's pilot study. 100 test subjects will be recruited and asked to drive in different traffic conditions, parking availabilities and parking availability information provision. The test data will be collected and analyzed at the end.

Anticipated Benefits

The proposed study will provide a clearer understanding of how parking information alone can improve congestion in urban areas. Moreover, the results of this work can provide decision makers, in this case DDOT, with a framework that aids their parking infrastructure decisions. Secondary but equally important benefit of the study is the safety analysis of the possible ways of presenting parking information.

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