Information Impact on Transportation Systems

Abstract:
With a broader distribution of personal smart devices and with an increasing availability of advanced navigation tools, more drivers can have access to real time information regarding the traffic situation. Our research focuses on determining how using the real time information about a transportation system could influence the system itself. We developed an agent based model to simulate the effect of drivers using real time information to avoid traffic congestion. Experiments reveal that the system's performance is influenced by the number of participants that have access to real time information. We also discover that, in certain circumstances, the system performance when all participants have information is no different from, and perhaps even worse than, when no participant has access to information.

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