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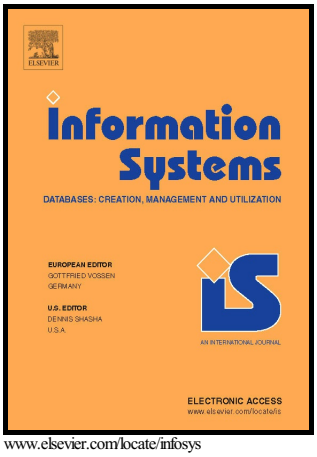

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Dynamic Route Planning with Real-Time Traffic Predictions[☆]

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Abstract

Situation aware route planning gathers increasing interest as cities become crowded and jammed. We present a system for individual trip planning that incorporates future traffic hazards in routing. Future traffic conditions are computed by a Spatio-Temporal Random Field based on a stream of sensor readings. In addition, our approach estimates traffic flow in areas with low sensor coverage using a Gaussian Process Regression. The conditioning of spatial regression on intermediate predictions of a discrete probabilistic graphical model allows to incorporate historical data, streamed online data and a rich dependency structure at the same time. We demonstrate the system with a real-world use-case from Dublin city, Ireland.

Keywords:
trip planning, real-time traffic model, traffic flow estimation

1. Introduction

The incentive for the creation of smart cities is the improvement of living quality and performance of the city. This is often accompanied with various mobile phone apps or web services to bring new services to the people of

[☆]Extended resubmission of [1].

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