A Comparative Analysis of Journey Time from Google Maps and Intelligent Transport System in Hong Kong

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ABSTRACT

In many cities, Intelligent Transport Systems (ITS) are mainly based on sensing technologies installed on roads to monitor real-time traffic and predict journey time. Although the Transport Department in Hong Kong publishes the collected traffic data for the public to access, its ITS only covers some major roads, highways and tunnels. Recently, Web mapping services (e.g., Google Maps and Microsoft Bing Maps) are new popular sources for many location-based applications to access real-time traffic data, predicted journey time and other location based services. In this paper, we conduct a comparative analysis on the journey time data derived from Google Maps and the ITS in Hong Kong. We first describe the underlying technologies of these two sources, and then conduct experiments to compare the journey time data derived from them for four route sets of a total of 35 major routes during two weeks in Hong Kong. Experimental results indicate that the p-values of the journey time data from the two sources are consistent with each other for most routes throughout the entire day; and the differences are acceptable. As a result, Google Maps provides high-quality real-time traffic data in Hong Kong. Due to the high deployment cost and limited coverage of the ITS, Google Maps is the promising source for location-based applications to access real-time journey time data.

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Research interests: Urban Computing, Spatio-Temporal Data Mining

All are welcome!