City Dashboard – Utilization of smartphones' sensor data for statistical travel-behavior analysis on the basis of automatic trip-extraction technology

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Abstract

This study proposes a novel system called "City Dashboard", which utilizes smartphones' sensor data for cheaper and more frequent travel-demand survey and analysis. One of the main technical challenges is automatic extraction of the trip-information, namely, origin, destination, departure time, arrival time, and modes of transport. To achieve it, this study proposes new features derived from characteristics of sensors and characteristics of human's travel behavior. The experimental result showed that the proposed method achieved accuracy of 88.8% in extracting trip-information, which is much higher than that of the methods that only use velocity and acceleration, namely 59.2%.

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