



LSGI Distinguished Lecture Series

Understanding Human Mobility Patterns in Urban Areas

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PhD & B.S.in Physics

School of Traffic & Transportation Engineering

Central South University, China



Date : 22 April 2016 (Friday)

Time : 2:30 pm

Venue : ZN604

Abstract

Understanding human mobility patterns is of significant importance for public health, city planning, traffic engineering and economic forecasting. With the emergence of big data recording human activities, the analysis and modeling of human mobility have achieved unprecedented developments in the last ten years. In an era of global urbanization, the rapidly accelerating demand for mobility places immense pressure on road network and urban space. We combine large-scale human mobility data with detailed Geographic Information System (GIS) data to understand road usage patterns and crowd gathering processes in urban areas. In the first study, we traced the surprisingly few driver sources of each road segment and find that locating the few driver sources contributing to the major traffic flow allow us to create more efficient congestion mitigation strategies. In the second study, we estimated the dynamical distribution of crowd based on multiple sources of human mobility data, discovering that high-density crowd gatherings can be sensed in advance by monitoring specific characteristics of human mobility.

Biography

Prof. Pu Wang received the B.S. degree in Physics from University of Science and Technology of China, in 2005, and the Ph.D. degree in Physics from University of Notre Dame, in 2010. From 2010/5 to 2011/12, he worked as a Postdoc researcher in the Department of Civil and Environmental Engineering in MIT. He is currently a Full Professor of the School of Traffic and Transportation Engineering in Central South University. His research interests include complex networks, traffic analytics, human dynamics and data mining.

All interested are welcome

All registered attendees will receive a Certificate of Attendance after the lecture.

Registration link: <https://myacs.polyu.edu.hk/utills/mysurvey/index.php/917726/lang-en>

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