THE HONG KONG POLYTECHNIC UNIVERSITY
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DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
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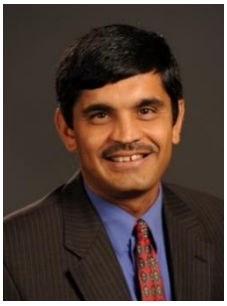

The Growing Nexus between Computational Data Science and Transportation Science: The Excitement and the Challenges

Prof. Chandra R. Bhat

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Abstract

This presentation will focus on a new data science landscape in which a whole host of smart equipment can act as sensors — legacy roadway systems, smart phones and GPS systems, and smart cars themselves. The key issue is how to deal with such voluminous and diverse amounts of incoming data per unit of time, and translate them into usable information for near-real time operations purposes or for longer-term planning purposes. This is a challenge, given the low latency and data reliability required to translate data into actionable intelligence, especially for such safety applications as collision avoidance. In addition, computational data science to translate data into information requires the ability to deal with data that may be from multiple sources, highly noisy, heterogeneous, and high-dimensional with complex interdependencies. On the last of these, the joint modeling of data with mixed types of dependent variables (including ordered-response or ordinal variables, unordered-response or nominal variables, count variables, and continuous variables) is a tricky problem. The presentation will discuss the exciting possibilities, some enquiry and computational data science pathways forward in terms of methods, and the research challenges in the emerging landscape of data science applications for the transportation field. This will include a discussion of the activities being undertaken as part of the U.S.DOT-funded Tier 1 Center at UT-Austin on "Data-Supported Transportation Planning and Operations" (D-STOP).

Date: **5 August 2019 (Monday)**
Time: **17:00 – 18:00**
Venue: **Room Y306, 3/F, Block Y,**
The Hong Kong Polytechnic University

Speaker's Biography

Prof. Chandra R. Bhat is a world-renowned expert in the area of transportation and urban policy design, with far reaching implications for public health, energy dependence, greenhouse gas emissions, and societal quality of life. Methodologically, he has been a pioneer in the formulation and use of statistical and econometric methods to analyze human choice behavior. His current research includes the social and environmental aspects of transportation, planning implications of connected and automated smart transportation systems (CASTS), and data science and predictive analytics. He is a recipient of many awards, including the 2017 Council of University Transportation Center (CUTC) Lifetime Achievement Award in Transportation Research and Education, the 2015 ASCE Frank Masters Award, and the 2013 German Humboldt Award. He was listed in 2017 as one of the top ten transportation thought leaders in academia by the Eno Foundation. He is also a top-cited transportation engineering researcher (web of science h-index of 50), and was listed in the most cited researchers in civil engineering by ShanghaiRanking's global ranking of academic subjects 2016 by Elsevier. He is the Editor-in-Chief of Transportation Research – Part B.

*D-STOP is the Data-Supported Transportation Operations and Planning Center at the University of Texas at Austin

***** All Interested Are Welcome *****

For further information, please contact Prof. William H.K. Lam at Tel. 2766-6045.
Free Admission. Please reserve your seat with Mr Guoyuan Li by email: 16900174R@connect.polyu.hk.
Certificates of attendance will be provided to participants who attend the whole seminar.