

Seminar Talk

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Tuesday, March 13, 2018
3:00 p.m. KH 224

Title: Deep Learning for Predictive Analysis in Transportation

Abstract:

Modern transportation systems with various smart devices and/or sensors generate data with a growing volume, velocity, and variety. The capability of examining these big data to uncover hidden patterns, correlations and other insights is critical for many decision makings, for example, when/where to dispatch taxis. Lately, deep learning has drawn much attention because of its versatility as a solution for many real-world applications (e.g., image/signal processing). Its promise of ability to make predictions or calculated suggestions based on large amounts of data motivates us to untap its potential in various transportation applications. This presentation will provide a thorough examination of current practices in leveraging deep learning for predictive applications in transportation data analytics. Key issues concentrated on the following aspects will be discussed: (i) traffic flow/speed prediction; (ii) traffic safety; (iii) travel demand prediction, and (iv) other topics (e.g., travel time prediction). It will also demonstrate how a deep learning approach can be implemented in addressing two real-world problems with the mining of massive field data. Based on the examined issues, needs, and challenges, it will further provide insights into potential opportunities in future research.

Bio:

Dr. Hong Yang is currently an Assistant Professor in the MSVE Department at ODU. Prior to joining ODU, he was a Post-doctoral Associate in the Department of Civil and Urban Engineering, and Center for Urban Science and Progress (CUSP) at New York University (NYU). He received the Ph.D. degree in Civil Engineering and the Master degree (2010) in Statistics from Rutgers, The State University of New Jersey. His academic and professional activities and interests include the development of simulation models of large-scale complex transportation systems, transportation safety, transportation data analytics, advanced technology and sensing applications for intelligent transportation systems, and traffic incident and emergency management. He is a (Co-)Principle Investigator for projects funded by the VDOT and UTRC (USDOT). He is also an active reviewer for sixteen transportation journals.