

Seminar Talk

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3:00 p.m. KH 224

Title: Data-Driven Studies on Highway Secondary Crashes

Abstract:

The occurrence of secondary crashes is one of the critical yet understudied highway safety issues. Induced by the primary crashes, the occurrence of secondary crashes can not only increase traffic delays but also the risk of additional contemporaneous incidents. Many highway agencies are eager to implement safety countermeasures to reduce this type of crashes. However, due to the limited understanding of the key contributing factors, they face a great challenge for determining the most appropriate countermeasures. To bridge this gap, this presentation aims to introduce data-driven approaches to assess the risk of having secondary crashes on highways. The presentation will discuss two major issues namely, (a) accurate identification of secondary crashes and, (b) assessing causal effects of contributing factors. The first issue is concerned with the development of improved identification methods based on rich traffic data from various sensors on roads. The second one is aimed at understanding the key mechanisms that are hypothesized to cause secondary crashes. The feasibility of using the proposed approaches will be discussed with real-world case studies.

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 at the Department of Civil and Urban Engineering, and Center for Urban Science and Progress (CUSP) at New York University (NYU). He holds 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 cover a wide range of topics including the development of simulation models of large scale complex transportation systems, transportation safety, advanced technology and sensing applications for intelligent transportation systems, modelling and evaluation of traffic incident and emergency management systems, transportation planning, and traffic operation. He is also actively involved in urban informatics and big data mining in transportation systems.