NUS National University of Singapore | Department of Civil & Environmental Engineering
Faculty of Engineering

The Centre for Transportation Research (CTR)

You are cordially invited to a Seminar jointly co-organized by The Centre for Transportation Research (CTR) and Department of Civil and Environmental Engineering

Using Big Data Analytics in Active Traffic Management

By

Mohamed Abdel-Aty
Trustee Chair, Pegasus Professor & Chair
Department of Civil, Environmental & Construction Eng.
University of Central Florida
http://www.cece.ucf.edu/aty/

Date: **Wednesday, 23 October, 2019**
Time: **2.30 pm to 3:30 pm**
Venue: **E1 #06-16**
Faculty of Engineering,
National University of Singapore

SCAN QR CODE TO REGISTER
or Visit https://mysurvey.nus.edu.sg/EFM/se/543BE5C273AEC130
by 23 Oct 2019 or when all seats are taken up

Abstract

The advent of the big data enables the real-time analysis for traffic safety and operation. By integrating multiple data sources, the data could help us understand the relationship between the presence of traffic conflicts and the crash real-time contributing factors (e.g. volume, speed, traffic control status, weather, etc), and quantify the impact of these factors on real-time crash risk. It is well known that most crashes happen because of the presence of conflicts between different road users. For example, the conflicts between leading vehicles and following vehicles could lead to rear-end crashes. Our extensive research has proven the validity of the methodologies that we have developed for 5-minute increments (predicting the safety risk for the next 5-10 and 10-15 minutes), so we can select appropriate ITS techniques including adjustment to adaptive signals on arterials, route diversion to/from freeways or arterials, variable speed limit (VSL) and ramp metering on freeways before crash/conflict's risk increase, and even the advanced connected vehicle technologies. Extensive simulation has proven the concept of real-time evaluation and visualization for various real-time risk mitigation techniques. The same data could also be used to evaluate congestion in real-time, and implement various ATM for congestion reduction and better travel time reliability.

Speaker Biography

Dr. Mohamed Abdel-Aty, PE is a Trustee Chair at the University of Central Florida (UCF). He is a Pegasus Professor and the Chair of the Civil, Environmental and Construction Engineering Department at UCF. He is leading the Future City initiative at UCF. His main expertise, and interests are in the areas of traffic safety analysis, simulation, big data and data analytics, ITS and CAV. He is pioneer and well recognized nationally and internationally in work and research in real-time safety, Proactive traffic management, integrating road safety and transportation planning, Highway Safety Manual and Connected Vehicles. In 2015, he was awarded the Pegasus Professorship the highest honor at UCF. Dr. Abdel-Aty has managed more than 62 research projects of more than $18 million. Dr. Abdel-Aty has published more than 580 papers, 304 in journals (Citations Google Scholar: 1530, H-Index 65; Scopus Citations: 8650 h-index: 51). He supervised to completion more than 75 PhD and MS students. Dr. Abdel-Aty is the Editor-in-Chief of Accident Analysis and Prevention, the premier journal in safety. He is the Associate Editor of Transportation Research Interdisciplinary Perspectives (TRIP), Elsevier. He is a member of the Editorial Boards of the ITS Journal, Analytic Methods in Accident Research, and the International Journal of Sustainable Transportation, Fellow of ASCE and ITE, and member of multiple TRB Committees, including Safety Data, Analysis & Evaluation, Safety Performance and User Information Systems. He is a Co-Chair of the ASCE Transportation Safety Committee. In 2003, he was selected as UCF's Distinguished Researcher, and in 2007 as UCF's Outstanding Graduate Teacher. He has received multiple research awards from the College of Engineering & Computer Science in 2003, 2008, 2010 and 2012, including the Dean's Advisory Board award. He and his students received multiple awards for their papers and research from ASCE, TRB, WCTR, ITS Florida and FL section ITE. His students received twice the best University dissertation, and once the best MS thesis. Dr. Aty has received the Francis C. Turner award from ASCE for his "outstanding leadership in the field of road safety nationally and internationally". He has also received the 2019 Transportation Safety Council Edmund R. Ricker Award, Institute of Transportation Engineering (ITE) and the Lifetime Achievement Safety Award from ARTBA in 2019. He has also received multiple International awards. He has delivered many Keynote speeches in conferences around the world, including in the US, Belgium, Brazil, China, Korea, Turkey, KSA, Jordan, Qatar, and UAE.

Contact Person: Prof Meng Qiang, Tel: 6516 5494, Email: ceemq@nus.edu.sg
General Enquiry/Registration: Ms. Norela Tel: 6516 4314, Email: nor@nus.edu.sg
*****Seats are limited. Please register early. All are welcome and admission is free*****

Location Map