Predictive and Pro-active Traffic Safety Research in the Era of Smart Cities where Big Data meets the AI/ML revolution

Abstract - C²SMART researchers have been developing novel predictive and operational approaches to improve traffic safety especially in highly congested urban areas. Most of the innovation in these research and deployment efforts are fueled by the availability of big data generated by connected & autonomous vehicles as well as ubiquitous mobile devices, sensors and cameras deployed throughout these urban areas. In this talk, we will first discuss the development of predictive safety analytics functions and pro-active traffic safety management approaches with a focus on New York City. Second, the role of a real-world cyber-physical test bed in these research efforts will be briefly discussed. An innovative dashboard tool which takes its cues from this idea of a cyber-physical testbed and deployed during the COVID-19 epidemic will also be presented as an example of a data-driven tool that employs emerging AI/ML methods. The talk will be concluded by a discussion of opportunities and challenges in terms of the future of traffic safety research and developments in complex urban environments such as NYC and Washington D.C.

Bio - Dr. Kann Ozbay is a tenured full Professor of Civil and Urban Engineering at NYU Tandon School of Engineering. He is currently the Director of the C²SMART Center (Tier 1 UTC funded by USDOT). He is the recipient of the prestigious National Science Foundation (NSF) CAREER award, IBM faculty award, and a number of best paper and excellence in research awards. He has co-authored 4 books and published more than 400 refereed papers in scholarly journals and conference proceedings.