Wednesday, February 10, 2016
12:00 PM to 1:30 PM
USC – Ralph and Goldy Lewis Hall (RGL) 101

RSVP to Janet Kleinman at
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Analysis and Prediction of Spatiotemporal Impact
Presented by Cyrus Shahabi and Ugur Demiryurek

Traffic congestion impedes our mobility, pollutes the air, wastes fuel, and hampers economic growth. While physical bottlenecks, overpopulation, weather, and construction can all lead to congestion, a key contributor to traffic congestion is road accidents - events that disrupt the normal flow of traffic. Reducing the impact of traffic accidents has been one of the primary objectives for transportation policy makers. In this talk, we present a novel machine learning framework to forecast how travel-time delays - caused by accidents - occur and progress in the transportation network. This research is conducted by correlating 4 years of historical traffic sensor and accident data archived under ADMS project developed - by METRANS and IMSC centers of USC - for Los Angeles County Metropolitan Transportation Authority (Metro).

Cyrus Shahabi is a Professor of Computer Science and Electrical Engineering, Director of the Information Laboratory (InfoLAB) at the Computer Science Department, Director of the NSF's Integrated Media Systems Center (IMSC), and Director of Informatics, all at USC. He was the Chief Technology Office and co-founder of a USC spin-off, Geosemble Technologies. Since then, he founded another company, ClearPath (recently rebranded as TallyGo), focusing on predictive path-planning for car navigation systems. He received his B.S. in Computer Engineering from Sharif University of Technology (Tehran) in 1989 and his M.S. and Ph.D. Degrees in Computer Science from USC in May 1993 and August 1996, respectively. He authored two books and more than two hundred research papers in the areas of databases, GIS and multimedia with more than 12 US Patents.

Ugur Demiryurek is Associate Director of Research at IMSC, and has M.S. and Ph.D. degrees in Computer Science from USC. His research is focused on fundamental and applied data management with special interest in Geospatial Databases, Cloud Computing, and Machine Learning. He has been supported by grants from both government agencies (NSF, Caltrans, Metro) and industry partners (Microsoft Research, Oracle Labs, Intel, HP Labs). Demiryurek authored two book chapters and more than forty research articles since 2010 and holds three US patents. Prior to IMSC, Demiryurek worked for fortune 500 companies in database technology development and data scientist positions. He regularly serves on the program committee of various major database conferences including ACM SIGMOD, ACM SIGSPATIAL, IEEE ICDM, DASFAA, SSTD, and MDM, and is a member of IEEE and ACM.

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