TEXAS TRANSPORTATION

WEBINAR TOPIC : HARNESSING HOUSEHOLD TRAVEL SURVEY WITH SMARTCARD DATA TO GENERATE SPATIOTEMPORALLY HETEROGENEOUS ACTIVITY PLANS FOR TRANSIT USERS

ABSTRACT: Current activity-based modeling (ABM) has two major limitations. First, ABM conventionally relies on household travel survey (HTS) data, which suffers from low spatial heterogeneity due to a low sampling rate (e.g., 1-5% of the population) and a low collection frequency. This issue results in a poor spatial resolution of generated and forecasted travel demand. Second, ABM performs population synthesis and daily activity schedule generation independently due to the lack of data for spatiotemporal travel choices (i.e., activity time and destination choices). This causes a loss of interdependency between sociodemographic attributes and corresponding activity-travel choices. Given the continuous collection of mobility patterns at a high spatial resolution for a large proportion of the population from transit smart cards (SC), the fusion of HTS and SC data has the potential to address the above limitations. The talk presents a novel cluster-based data fusion method that exploits the benefits of both HTS and SC data to jointly generate a spatially heterogeneous synthetic population of individuals and their activity schedules. The properties of the proposed method are analytically derived to ensure an interpretable and trustworthy data fusion. The application of the proposed method is demonstrated using the HTS and SC data from Seoul, South Korea.

WHEN : Wed. April 24th
5-6 pm Central US time
LOCATION: ECJ 3.110 +ZOOM
https://utexas.zoom.us/j/96290357990

*Food and drinks will be provided.

Get to Know Our Guest Speaker:

Dr Prateek Bansal

Dr Prateek Bansal is a Assistant Professor at the National University of Singapore (NUS). Before joining NUS in 2022, he was a Leverhulme Trust Early Career Fellow at Imperial College London and did a Ph.D. from Cornell, and MSc from UT Austin, a BTech from IIT Delhi. Prateek leads the **Behavioral Cognitive Science Lab at NUS** and is a co-principal investigator of the Adaptive Mobility module at Future Cities Laboratory, Singapore. His research group is interested in creating new methods to address challenging questions related to mobility behavior and the adoption of emerging technologies at an individual level and an urban scale. He is also an Associate Editor of the Journal of Transport Economics & Policy and the Journal of Public Transportation.