Research Centre
for
Integrated Transport Innovation (rCITI)
Web Seminar

Web Seminar Link: https://unsw.zoom.us/j/8493874422

Date/Time: **Thursday, 26 November 2020, 12:30pm - 1:00pm**

Title: **Graph Neural Network for Robust Public Transit Demand Prediction**

PRESENTER: Can Li

PhD candidate, rCITI, UNSW

Bio:

Can Li received the M.S. degree in computer and science engineering from Rutgers University. She is a PhD candidate at the School of Computer Science and Engineering, the University of New South Wales. She is currently supervised by Dr Wei Liu, Prof. Travis Waller, and Dr Lina Yao. Her research interests lie in deep learning for Smart Transport based on big data.

Abstract:

Understanding and forecasting mobility patterns and travel demand are fundamental and critical to efficient transport infrastructure planning and service operation. However, most existing studies focused on deterministic demand estimation/prediction/analytics. Differently, this study provides confidence interval based demand forecasting, which can help transport planning and operation authorities to better accommodate demand uncertainty/variability. A Probabilistic Graph Convolution Model is proposed to capture and utilize the correlations among spatial and temporal information for Origin-Destination (OD) demand prediction. In particular, it consists of two components: (i) a prediction module based on Graph Convolution Network and combined with the gated mechanism to predict OD demand by utilizing spatio-temporal relations; (ii) a Bayesian-based approximation module to measure the confidence interval of demand prediction by evaluating the graph-based model uncertainty.