Lingnan University 嶺南大學 香港 Hong Kong | Faculty of Business 嶺南大學商學院 | HKIBS Hong Kong Institute of Business Studies 香港商學研究所 | 電腦及決策科學學系 Department of Computing & Decision Sciences

POSTGRADUATE SEMINAR SERIES

Topic Defence Seminar

Topic Title: **Forecasting Sparse Taxi Demand using a Spatiotemporal Graph Neural Network with Crowdsensing Geolocation Data**

Presenter: **Mr. Shen Yifei**

MPhil student of Computing and Decision Sciences

Abstract : Taxi services are a crucial mode of transportation in urban areas and their demand forecasting is an important challenge for intelligent transportation systems. Accurate taxi demand prediction can help transportation authorities allocate resources more effectively and mitigate issues like empty taxis and traffic congestion. Traditional forecasting methods often fail to capture the complex nonlinear spatiotemporal relationships in taxi demand data. Recent deep learning-based approaches have shown promise, but they often overlook the impact of data sparsity on model performance. In this work, we propose a spatiotemporal graph neural network model for predicting sparse taxi demand, leveraging pedestrian traffic data as an additional input feature. Our model utilizes convolutional layers and gated recurrent units to extract multi-view spatiotemporal features of taxi demand. By incorporating population density information, the model is able to improve prediction accuracy in the face of data sparsity. This framework represents a novel approach to addressing the challenging problem of forecasting sparse taxi demand in smart cities.

Date : 24 April 2024, Wednesday

Time : 9:00 – 11:00

Venue : SEK206, 2/F, Simon & Eleanor Kwok Building

Language : English

*** All are Welcome ***

For enquiries, please contact 2616-8373 or by email (hkibs@ln.edu.hk).

Due date: 25 April 2024