Wenbo Yan

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Education

The Hong Kong University of Science and Technology (Guangzhou) — Guangzhou, China
Doctor of Philosophy in Urban Governance and Design, Supervisor: Dr.Lin YANG — *Aug 2023 – Present*
Research interests: Environmental Economics, Transportation Economics, Urban Economics

The University of Sydney — Sydney, Australia
Master of Data Science — *Aug 2020 – Jun 2021*
Graduate Certificate of Data science — *Feb 2020 – Jun 2020*

Shandong Jiaotong University — Jinan, Shandong,China
Bachelor of Traffic Engineering — *Sep 2014 – Jun 2018*

Relevant Coursework

Econometrics and environmental economics: Quantitative Social Science, Cities and the Environment, Empirical Methods for Urban Research

Data Science: Database Management System, Algorithms, Machine Learning and Data Mining, Advanced Machine Learning, Predictive Analytics, Visual Analytics, Data Analysis in the Social Sciences, etc.

Transportation: Traffic system analysis, Traffic Geo-information System, Traffic Plan, etc.

Publication

Published

- **Yan**, Yao, Chen, Rayaprolu & Moylan (2021). Impacts of School Reopening on Variations in Local Bus Performance in Sydney. Accepted for presentation at the 100th Transportation Research Board Annual Meeting 2021. (Speaker) Accepted by *Transportation Research Record*.

Working Paper

- Basem Suleiman, Ali Anaissi, **Wenbo Yan**, Sophie Zou and Ling Nga Meric Tong. A Federated Learning Anomaly Detection Approach for IoT Smart Home Environments. (Submitted)
- Analyze the urban mobility under the Covid-19 based on Baidu human mobility data
- Urban micro-climate and shared bike travel behavior

Research Experience

Peking University Shenzhen Graduate School — Shenzhen, China
Research Assistant — *Dec 2021 – May 2023*

- Currently working with Dr.Zhaoyao Gong on the project "Analyze the urban mobility under the Covid-19 based on Baidu human mobility data"
- Exploratory analysis was conducted on mobility data.
- Reveal the association between recovery status and specific professions using workplace POIs.
- Reveal the association between recovery status and built-environment, socio-economic factors.

Tongji-MIT City Science Lab @ Shanghai — Online
Research Intern — *Oct 2021 – Oct 2022*

- Working on the SoCity project: Based on the decentralization concept and blockchain technology, tackle the urban issue (Carbon Emission).
- I am responsible for building the travel modes classification model based on the trajectory dataset.
- We are also working on using open data to set personal carbon emission standards.

School of Civil Engineering, University of Sydney — Sydney, Australia
Research Intern — *April 2020 – Aug 2020*

- Evaluating Public transport performance based on GTFS real-time data during Covid-19 time,supervised by Dr.Emily Moylan

- The research has produced a paper as the first author and accepted by the TRR.
- Received Sydney Transport Infrastructure Research Program Scholarship (AU 2500)

School of Computer Science, University of Sydney Sydney, Australia

Research Intern *Feb 2021 – Jun 2021*

- In this project, we propose a new anomaly detection approach to apply to the real smart building dataset which can protect data privacy on the basis of keeping the equal model performance, supervised by Dr.Basem Basem Suleiman and Dr.Ali Anaissi
- I am mainly responsible for implementing the Federated learning experiments parameter tuning and the writing of Experiments and Discussion sections.
- We have finalized the draft and are prepared to submit it.

School of Architecture, Tsinghua University Beijing, China

Research Intern *May 2019 – Sep 2019*

- Smart curb to detect human flow and Parking violation detection, supervised by Dr. LONG YING
- We designed a kind of smart curb that can realize the functions of human flow technology, Vehicle road coordination, and intelligent lighting. Smart curb is based on Raspberry PI ZERO and is equipped with ultrasonic sensors and night-vision cameras that can detect and take pictures of people and traffic within a certain range. In addition, the outer shell of the smart curb adopts 3D printing technology, which can better adapt to the outer shell of hardware.

Work Experience

China Academy of Urban Planning and Design-Alibaba UrbanX Lab Online

Data Analysis Intern *June 2020 – Sep 2020*

- Collect and clean the urban development index data of three major urban regions in China, visualize the index and use K-means clustering algorithms to reveal the clustering result of three major urban regions.
- Use Python to crawl Gaode traffic condition data and store data into Tencent Cloud, using QGIS to do the spatial visualization.

Beijing Didi Infinity Technology and Development Co.,Ltd Jinan, Shandong, China

Assistant transportation engineer *Feb 2018 – April 2018*

- Assist algorithm engineer to implement adaptive traffic signal based on trajectory data.
- Assist traffic engineer to build traffic state diagnosis system.
- Manage Traffic Data Visualization Platform.

Awards & Achievements

The winner of the second TRB Travel Time, Speed & Reliability (TTSR) Student Data Contest, 2021

Sydney Transport Infrastructure Research Program Scholarship (AU2500), 2020

The Second Prize Scholarship in Shandong Jiaotong University, 2015-2017

Provincial Mathematical Model Contest second prize, 2016

Skills

Programming: Python, R, Stata, Qgis, Arcgis, Latex

Languages: Chinese (Native), English (Fluent)