YUANJIE (TUKEY) TU

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SUMMARY

PhD candidate with 8+ years of computational analysis experience. Creative scientist who can connect ideas across computing, transportation, and sustainable technology. Possesses programming expertise in machine learning, statistics, data visualization, and software development. Skilled communicator capable of tailoring explanations of complicated subjects to diverse audiences. **Looking for a data scientist role starting from summer 2024!**

TECHNICAL SKILLS

Programming Languages	Python, Java, Javascript/HTML5/CSS, R, SQL, PHP
Database	MySQL, SQL Server, MongoDB
Deep Learning Frameworks	PyTorch, TensorFlow
Tools	Git, Docker, d3.js

EDUCATION

University of Washington (UW), Seattle, USA January 2019 - present
Ph.D. in Transportation Engineering, Advisor: Dr. Linda Boyle

University of Washington (UW), Tacoma, USA August 2022 - present
M.S. coursework in Computer Science & Systems

WORK & RESEARCH EXPERIENCE

Decomposing d3.js: Behavior-Driven Testing of Big Data Exploration Tools Seattle, USA
Graduate Researcher January - present

- Design a collection of D3 visualization introduction tutorials using various climate change datasets
- Construct a knowledge graph representing the collective knowledge of the D3 community
- Train machine learning models and/or LLMs to generate customized learning content for D3 users

Electric Vehicle (EV) Charging Demand Prediction, UW Seattle, WA, USA
Graduate Researcher November 2023 - present

- Develop a collection of D3 visualizations on EV charging demand characteristics using a dataset in Palo Alto, California
- Develop a deep learning modeling framework for time-series EV charging demand using the same dataset

Systems and Modeling for Accelerated Research in Transportation Project - UW (Funded by US Dept. of Energy) Seattle, WA, USA
Research Assistant Lead November 2020 - May 2022

- Designed and deployed an online survey application on major ridehailing driver behaviors
- Explored prospective effects of trip-level characteristics on autonomous vehicle ownership choices in the US by developing an integrated choice and latent variable (ICLV) modeling framework
- Investigated the impacts of trip features on ride-hailing drivers' response to trip requests using a generalized additive mixed model (GAMM)
- Jointly modeled ride-hailing drivers' working time and relocation preferences by developing a mixed logit discrete choice model framework

Pronto: Seattle Docked Bike sharing project, UW Seattle, WA
Graduate Researcher February 2021 - May 2021

· Co-designed and deployed an interactive web application, visualizing the history of Pronto, the docked bike sharing system in Seattle, using HTML, CSS, JavaScript and d3

Promoting Built Environment Quality for Cycling Using Dockless Public Bike Data, Peking University (Funded by NSF China) Beijing & Shenzhen, China
Research Assistant September 2017 - June 2018

· Investigated the relationship between dockless bike usage and the built environment in Shanghai using a Generalized Additive Mixed Model (GAMM)

SELECTED PEER-REVIEWED PUBLICATIONS

Y. Tu, P. Jabbari, N. Zuniga-Garcia and D. MacKenzie.(2023). "Understanding working time and relocation choices of ridehailing drivers." *Transportation (major revision).*

M. Khaloei, **Y. Tu**, N. Arefin Khan, and D. MacKenzie.(2023). "Automating ridehailing services would reduce pooling, especially among women." *Transportation Research Part A: Policy and Practice (under review).*

Y. Tu, P. Jabbari, N. Arefin Khan and D. MacKenzie.(2022). "Effects of trip-level characteristics on autonomous vehicle ownership: A U.S. analysis." *Transportation Research Part D: Transport and Environment, 108, 103321.*

Y. Tu, M. Khaloei, N. Arefin Khan and D. MacKenzie.(2022). "Effects of trip attributes on ridehailing driver trip request acceptance." *International Journal of Sustainable Transportation (accepted).*

L. Hu, J. Yang, T. Yang, **Y. Tu** and J Zhu. (2019). "Urban spatial structure and travel in China." *Journal of Planning Literature, 0885412219853259.*

Y. Tu, P. Chen, X. Gao, J. Yang and X. Chen.(2019). "How to make dockless bikeshare good for cities: Curbing oversupplied bikes." *Transportation Research Record, 2673(6), 618-627.*

SELECTED PRESENTATIONS & POSTERS

Y. Tu and M. Binjolkar. "Leverage deep learning in electric vehicle charging demand prediction" *Women in Data Science Puget Sound Conference.* Seattle, USA, May 2024 (upcoming).

Y. Tu, M. Khaloei, N. Arefin Khan and MacKenzie, D. "What makes ridehailing drivers reject trips?" *Transportation Research Board 102nd Annual meeting.* Washington D.C., USA, January 2023.

TEACHING, LEADERSHIP AND SERVICE

Dept. Computer Science and Engineering, U. of Washington Seattle, WA
Graduate Teaching Assistant, CSE 442/412 Data Visualization Fall 2022 - present

· Co-teach lecture "d3.js deep dive" for three quarters and teach weekly sessions
· Lead assignment grading and weely office hours

Dept. Civil and Environmental Engineering, U. of Washington Seattle, WA
Graduate Teaching Assistant, CEE 498 machine learning Spring 2020

· Designed 4 "Python tutorial" Google Colab notebooks, 4 homework assignments on machine learning concepts and calculations, and 3 course projects
· Gave 2 Python tutorial lectures