

Jingyi (Gillian) He

Tel: (1) 2062903171 | E-mail: jingyihe0718@gmail.com | Address: Seattle, WA

EDUCATION BACKGROUND

University of Washington

09/2024-Current

Major: Transportation Engineering, Master of Science. GPA: 3.53

Advisor: Prof. Yinhai Wang

Coursework: Data structure and algorithm, Transportation Networks and Optimization, Inferential Data Analysis for Engineers, Planning for People and Freight, Transportation Data Management and Visualization etc.

Jiangxi University of Science And Technology

09/2020-06/2024

Major: Civil Engineering, Bachelor of Engineering.

GPA: 83.36/100 (TOP15%)

RESEARCH ACHIEVEMENTS

He, J., Chen, K., Wang, B., & Wang, Y. "Communication-aware Diffusion Models for Multi-Agent Trajectory Forecasting in Connected and Autonomous Vehicles." ACM/IEEE SEC 2025, EdgeCAV Workshop, Dec 3-6, 2025, Washington, D.C. <https://dl.acm.org/doi/10.1145/3769102.3774636>

Jingyi He, Diffusion-Based Trajectory Planning for Safe Overtaking Using the OSHA Highway Dataset (Conference Poster), 2025 Region 10 Transportation Conference, Portland State University, Portland, OR, Oct 2025.

Nasri, M., **He, J.**, Karim, M. M., Zhang, S., & Wang, Y. (2025). Can Surrogate Safety Measures Explain Crash Patterns at Signalized Intersections? Evidence from Large-Scale Connected-Vehicle Data Using Negative Binomial, Random Forest, and Diffusion GNN Models. (Revision Completed, Pending at the Journal of Safety Research)

RESEARCH EXPERIENCES

Communication-aware Diffusion Models for Multi-Agent Trajectory Forecasting in Connected and Autonomous Vehicles

03/2025-current

Research Assistant, Directed by Prof. Yinhai Wang

University Of Washington

- * Developed a trajectory forecasting model using a diffusion-based approach with a U-Net backbone, incorporating historical motion, driving style, and map context to predict multi-agent interactions.
- * Introduced a communication-aware guidance mechanism during inference, leveraging goal-state, driving style, and interaction signals to improve trajectory predictions.
- * Achieved improved FDE and ADE compared to the baseline, with the proposed diffusion model showing better results.

Identifying Crash Patterns Using SSMs from Connected Vehicle Data

12/2024-current

Research Assistant, Directed by Prof. Yinhai Wang

University Of Washington

- * Analyzed 54.8 million connected vehicle trajectories to extract surrogate safety measures (SSMs) like DRAC, TTC, and PET across 139 intersections.
- * Developed predictive models (XGBoost, Random Forest, Negative Binomial regression, Diffusion Graph Neural Networks) to assess crash likelihood and explore the relationship between SSMs and crash data.
- * Assisted in examining the relationship between surrogate safety measures and crash data, enhancing the understanding of how surrogate measures can be used in traffic safety assessments.

Research on the measurement of equivalent viscosity of non-Newtonian fluids

04/2022-02/2024

Undergraduate Researcher, Directed by Prof. Zheng Sun

Jiangxi University Of Science And Technology

- * Investigated the rheological properties of non-Newtonian fluids, including concrete, mud, and debris flows, to understand their flow behavior under varying conditions.
- * Developed and refined rheological models and equations to characterize non-Newtonian fluid flow, enhancing the accuracy of fluid behavior predictions for practical applications.
- * Performed experimental measurements on 30 datasets and analyzed the results to create detailed rheological curves, validating and refining the theoretical models.

PROFESSIONAL EXPERIENCES

Pedestrian Safety & Restriping Improvement Project, Cowlitz Indian Tribe **Washington, US**
Funded by the US Federal Government **11/2025-current**

Grad Student Assistant,

- * Assisted in preparing the TTPSF safety-grant application by drafting project descriptions and documenting pedestrian visibility, roadway conditions, and safety needs.
- * Supported technical review of corridor safety issues and proposed improvements such as restriping plans and pedestrian warning-sign installations.

Real-Time Traffic Signal Safety Interventions Project (RTSSI), City of Bellevue **Seattle, US**
Funded by the US Federal Government **06/2025-current**

Research Assistant,

- * Led the evaluation of multimodal detection systems in a federally funded real-world traffic project by validating system accuracy, latency, and false positive rates through concurrent data collection from multiple sensors and the SCATS signal API.
- * Conducted in-depth validation for three city-defined traffic use cases (e.g., dynamic pedestrian walk extension, left-turn signal control) by analyzing system behavior under real-world deployment; delivered evaluation reports and data-driven recommendations for improving detection logic and configuration parameters.

Jiangxi Gannan Highway Design Institute Co., Ltd **Ganzhou, China**
Transportation Intern **07/2023-08/2023**

- * Took charge for the site survey and collect record of the maintenance project of road by using Unmanned Aerial Vehicle(UAV) in Dingnan and Longnan County, generating 3 reports of road situation.
- * Utilized Real-Time Kinematic(RTK) and other technologies to record the data on damaged road sections.
- * Conducted terrain ground image scans and generated high-definition maps, transferable to AutoCAD for further analysis and design.

HONOR & CERTIFICATION

Cathy Strombom Memorial Scholarship (\$5,000), WTS Puget Sound Chapter **02/2026**
Scholarship, 2024 Outstanding Student Overseas Study Scholarship (\$3,000) **04/2024**
First Prize, 13th National College Students Market Research and Analysis Competition **04/2023**
Dean's List, Jiangxi University Of Science And Technology (2 times) **09/2021-06/2023**

Technical skills: C/C++ Programming, Python (pandas, numpy, matplotlib, scipy, pytorch, tensorflow, Gurobi), R, SQL, Excel, SPSS, Vissim, Sumo, AutoCAD etc.

Specialties: Data Analytics, Data Visualization, Data Mining, Machine Learning, Deep Learning, Statistical Analysis.

LEADERSHIP

PacTrans Students Conference organizer **06/2025-10/2025**
Undergraduate Student Affairs Assistant, School of Civil & Environmental Engineering **10/2020-06/2023**
Team Leader, 13th National College Students Market Research and Analysis Competition **10/2022-05/2023**