JIE WANG

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Education

University of Washington   **July 2023 – Dec. 2023(Exp.)**
Visiting student & Research assistant (Advisor: Cynthia Chen)   *College of Civil & Environmental Engineering, USA*
Research Project involved: Socially-integrated Technological Solutions for Real-time Response and Neighborhood Survival After Extreme Events

Tsinghua University   **Aug. 2022 – June 2024(Exp.)**
Master of Logistics Engineering and Management (GPA:3.9 / 4.0)   *Institution of data and information, China*
Course: Applied Statistics, Advanced Operations Research, Production management, Supply Chain Management

Sun Yat-Sen University   **Sep. 2018 – June 2022**
Bachelor of Traffic Engineering (GPA:3.9 / 4.0)   *School of Intelligent Systems Engineering, China*
Course: Machine Learning, Probability and Statistics, Linear Algebra, Data Structure and Algorithm, Numerical Analysis, Advanced Mathematics

Research Projects

Optimization of Resource Allocation Considering Social Capital   **July 2023 – Dec. 2023(Exp.)**
Advisor: Prof. Cynthia Chen, University of Washington, USA

- Explored techniques to enhance the efficiency of resource allocation, cosidering peer-to-peer sharing in disasters;
- Devised a model to quantify social capital within communities, with two communities in Seattle serving as examples;
- Integrated community social capital into a G-network resource allocation model and solved it using Markov chain techniques.

Integrated Production and Delivery Scheduling under Online Demand   **Oct. 2022 – June 2023**
Advisor: Prof. Peng Yang, Tsinghua University, China

- Developed a framework to strategize production and delivery scheduling amidst dynamic order arrivals;
- Employed the Markov decision model to represent the integrated production and delivery problem, and addressed it through approximate dynamic programming;
- Investigated the effects of varying order arrival patterns and delivery strategies on merchant objectives.

Cooperative Mechanism of Autonomous Transportation System   **Oct. 2021 – June 2022**
Advisor: Prof. Ming Cai, Sun Yat-Sen University, China

- Formulated a collaborative model for the Autonomous Transportation System (ATS), enabling autonomous system responses;
- Matched traffic demand with ATS services leveraging natural language processing and neural networks;
- Established a service collaboration framework based on dynamic planning, ensuring accuracy at both physical and logical levels.

Automated Vehicle Control Strategy Based on Cellular Automaton   **Apr. 2021 – Apr. 2022**
Advisor: Prof. Bokui Chen, Tsinghua University, China

- Devised a basic rule for Connected Automated Vehicles (CAV) at non-signaled intersections to improve traffic efficiency;
- Designed a network-oriented control strategy for CAVs, considering variable traffic densities across different sections;
- Simulated the dynamics of CAV on road networks using cellular automata principles.

Industry Experience

Shenzhen Urban Transport Planning Center Co.,Ltd   **July 2021 – Sept. 2021**
Data analyst intern, Shenzhen China

- Data mining of Shenzhen metro passenger flow; used regression analysis model to predict passenger flow;
- Participated in the development and design of TransPass platform functions and conducted platform data visualization.

Publication and working papers

J. Wang, P. Yang, **(2023)**. An approximate dynamic programming approach for multi-period production-delivery scheduling of online orders with due dates [Submitted to *Computers & Industrial Engineering*] [PDF]

J. Wang, C. Xiong, and M. Cai **(2022)** Autonomous Transportation System collaboration mechanism based on Traffic semantics: an implementation in Automated Vehicles Crossing an Intersection Scenario [Submitted to *IEEE Transactions on Human-Machine Systems*] [PDF]

J. Wang, Z. Cai, P. Yang, Y. Chen, B. Chen **(2022)**, An Advanced Control Strategy for Connected Autonomous Vehicles Based on Micro Simulation Models at Multiple Intersections [Published in *Physica A: Statistical Mechanics and its Applications*] DOI: https://doi.org/10.1016/j.physa.2023.128836 [PDF]

Journals Peer Reviewer

Transportation Research Part E: Logistics and Transportation Review (1 article)

Awards

Meritorious Winner(7.09%) *of MCM/ICM 2021 - MCM Problem C*
Outstanding Student Scholarship *of Sun Yat-sen University*
Transport Fund Scholarship *of Sun Yat-sen University*

Other

Student Works:
Student Assistant, School of Intelligent Systems Engineering, Sun Yat-Sen University
Head of the Youth Volunteer Department of the Student Union, Sun Yat-Sen University
Languages and computer skills: *PYTHON, MATLAB, C, GIT, SQL, CAD, LATEX*
Hobbies: *Hiking, Photography*