

# Jingjie WANG

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## EDUCATION

**Sichuan University**

**Chengdu, China**

*Bachelor of Science in **Industrial Engineering***

Sep 2021-Jun 2025

**GPA:** 3.92/4.00; **Grades:** 92.21/100.00

**Relevant Courses:** Operations Research, Human Factors Engineering, Supply Chain Management, Simulation Modeling, Facility Layout and Material Handling, Information Systems Engineering, Engineering Computing, Design of Experiments and Quality Assurance, Manufacturing Process and Analysis, Data Analytics, etc.

**Research Interests:** Cyber-Physical-Human Systems, Environmental and Emergency Management

## AWARDS & HONORS

Sichuan University Special Grade Scholarship (**Highest Honor, Top 1%**)

Sichuan University Pittsburgh Institute Dean's list (**Top 5%**)

Sichuan University Outstanding Student and Outstanding Student Leader (**Top 5%**)

Finalist of the 2024 Interdisciplinary Contest in Modeling (**Top 2%, International Level**)

Chinese Market Research Competition (Third Prize, **National Level**)

Tsinghua IE Liangjian-Industrial Engineering Application Case Competition (Third Prize, **National Level**)

## PATENTS & PUBLICATIONS

Ground Penetrating Radar Data Intelligent Processing Platform (2024SR0565457)

[1] Hu, B., Huang, L., Chang, H., Ji, Z., Yan, Z., Qu, D., **Wang, J.**, Qu, F., & Liang, H. (2025). A review of key parameters affecting inorganic scaling in thermal, pressure, and osmosis-driven membranes for produced water desalination. *Separation and Purification Technology*, 354, 129023.

<https://doi.org/10.1016/j.seppur.2024.129023>

[2] Xu, Z., **Wang, J.**, Yu C., Wang, K., Li, J., Lee, E., & Xie, W. Pedestrian and Non-Motor Vehicle Track Extraction and Traffic Characteristics Analysis at Intersection. (Submitted in ***Accident Analysis & Prevention***)

[3] **Wang, J.**, Liu, X, & Xu, Z. Spatial-Temporal Pattern Evolution and Driving Factors of Chinese Transportation Embodied Carbon Transfer. (Submitted in ***Journal of Cleaner Production***)

## PRESENTATIONS

**Research on Peak Transport Congestion Control based on Convolutional Neural Network**

**2023 IoTSC Meeting**, Chongqing, China, March 24 - 26, 2023.

- Developed a CNN model to optimize vehicle routing and reduce peak transport congestion in Chaozhou, China.
- Demonstrated the model's ability to effectively manage transport congestion by comparing it with traditional ones.
- Conducted experiments to validate the CNN model's performance, proving its superiority for real-world challenges.

**Analysis of Influencing Factors of the Garbage Sorting Behavior on Campus in the Post-Epidemic Period**

**2023 ICSPHS Meeting** (Remote), Oxford, UK, April 24, 2023.

- Analyzed factors influencing college students' garbage-sorting behaviors based on the Theory of Planned Behavior.
- Employed statistical methods, including KMO tests and AMOS Structural Equation Fitting, to validate the data.
- Revealed the impact of personal moral norms on students' intentions and behaviors regarding garbage sorting.

## RESEARCH PROJECTS

**China's Transportation-Related Embodied Carbon Transfer Patterns and Drivers**

**Chengdu, China**

*Research Assistant, advised by Dr. Zeshui Xu, **Sichuan University***

Sep 2023-Sep 2024

- Unveiled spatial-temporal evolution patterns of China's transportation embodied carbon transfer with MRIO model.
- Integrated complex network theory to dissect and identify key provinces and patterns of the embodied carbon.
- Applied the STIRPAT-QAP model to investigate driving factors behind the embodied carbon transfers.

**Analysis and Algorithm Development for Mixed Traffic Flow Based on Road Video Data** **Chengdu, China**  
*Research Assistant, advised by Dr. Wei Xie, Sichuan University* Sep 2023-Sep 2024

- Designed a methodology using YOLO-v8 and DeepSort algorithms for real-time detection and trajectory extraction.
- Applied homography transformation to map 2D coordinates and analyzed mixed traffic characteristics.
- Analyzed conflict avoidance behaviors and self-organizing patterns to improve safety and efficiency.

**Simulation and Optimization of Bandwidth Allocation in Cloud Computing Environment** **Chengdu, China**  
*Research Assistant, advised by Dr. Haitao Liu, Sichuan University* Feb 2023-Sep 2023

- Focused on CDNs, using the SimPy simulation library and Optimal Computing Budget Allocation (OCBA) method.
- Introduced Intermittent Management (IM), reducing bandwidth costs by at least 20% without compromising QoS.
- Conducted contrast and simulations to validate the superiority of the cloud-based content distribution networks.

**Enhancing Laparoscopic Surgery Training with Automated Error Detection System** **Chengdu, China**  
*Research Assistant, advised by Dr. Rong Yin, Sichuan University* Sep 2022-Sep 2023

- Developed the ATFS using Arduino, enabling real-time feedback and significantly reducing operation mistakes.
- Improved confidence and precision with ATFS, validated by paired t-tests and Wilcoxon signed-rank tests.
- Conducted between-group tests showing ATFS users performed better, highlighting its value for surgical training.

## TEACHING EXPERIENCE

Teaching Assistant in *Differential Equations* Sep 2024-Jan 2025  
Teaching Assistant in *Electric Circuits and MATLAB* Sep 2024-Jan 2025  
Teaching Assistant in *Innovation Engineering Science* Feb 2024-Jun 2024

## LEADERSHIP EXPERIENCE & VOLUNTEERING

**Industrial Engineering Class 2 at Sichuan University** **Chengdu, China**  
*Class President* Sep 2021-Present

- Led 62 students to foster a collaborative community through various academic and extracurricular activities.
- Orchestrated various academic study groups and social gatherings to foster a conducive learning atmosphere.
- Established effective communication channels between students and faculty, facilitating knowledge exchange.

**Association for International Disaster Reduction and Emergency Management** **Chengdu, China**  
*Association President* Sep 2022-Present

- Led the organization to secure Silver in the Sichuan University Volunteer Service Competition and second place in the Challenge Cup Academic Science and Technology Works Competition 2022-2023.
- Launched more than 10 activities in the community, including disaster relief assistance and emergency rescue drills.
- Organized academic seminars, lectures, and projects concerning disaster reduction and emergency management.

## EXTRACURRICULAR ACTIVITIES

**Debate Team, Captain** Sep 2022-Present

- Winner of the third prize in the Lushan Cup debate competition (National Level)
- Winner of the first prize in the Yunmi Cup debate competition (University Level)
- Winner of the Best Debater in the Student Innovation Forum (University Level)

**Volleyball Team, Captain** Sep 2022-Present

- Championship in the volleyball individual competition in 2022 (University Level)
- The final eight in the volleyball individual competition in 2022 (University Level)
- The final eight in the volleyball College Cup in 2022 (University Level)

**PA Group, Peer Advisor & Director** May 2022-Jun 2023

- Aided first-year students with both academic coursework and adjusting to their new environment as Peer Advisor
- Guide other Peer Advisors and organize special events for all freshmen like ice-breaking.

## SKILLS

**Language:** English (TOEFL: 107/120), Mandarin (native)  
**IT Skills:** Python, MATLAB, Minitab, R, SIMUL8, Tableau, SPSS, MS Office Suite