Wei Zhou

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E-mail：vvgod@seu.edu.cn **Phone Number**：15996296657

Basic information

Birth Date：1996.07 **Native Place**：Hefei, Anhui Province

Major: Transportation Engineering **Education**：P.h.D candidate (Expected graduation by end of 2024 / early 2025)

Research interests： Cooperative Vehicle-Road Vision Perception, including 2D/3D Vehicle Detection, Road Anomaly/Accident Detection, Pedestrian Intent Recognition, Multimodal Large Models, etc.

Education experience

2019.09–2025.03 (expected)	Southeast University （985/211，**Ranking in China[1]：15**）	School of Transportation	Transportation Engineering	P.h.D candidate
2015.09–2019.06	Nanjing University of Science and Technology （985 Advantageous Discipline Platform /211，**Ranking in China[1]：36**）	School of Automation	Smart Grid and Information Engineering	Bachelor degree

Research achievements

ResearchGate ***https://www.researchgate.net/profile/Zhou-Wei-44***

Google Scholar ***https://scholar.google.com.hk/citations?user=pJQ6KKsAAAAJ&hl=zh-CN***

➢ **Papers** (*A total of 25 academic papers published/accepted. Authored 9 SCI papers as the first author, each with an Impact Factor (IF) greater than 6.0, including 8 papers in JCR Q1 Journals. As the corresponding author, published 1 paper in the top Chinese journal in transportation, "China Journal of Highway and Transport". Authored 2 papers under revision/review as the first author, all in JCR Q1 Journals. This resume lists only the papers where I am the first or corresponding author*)

- **Wei Zhou**, Longhui Wen, Yunfei Zhan, & Chen Wang*. (2023). An Appearance-Motion Network for Vision-Based Crash Detection: Improving the Accuracy in Congested Traffic. *IEEE Transactions on Intelligent Transportation Systems*. **(JCR Q1 | IF=8.5) (First author, Published)**
- **Wei Zhou**, Yuqing Liu, Zhao Lei, Sixuan Xu & Chen Wang*. (2023). Pedestrian Crossing Intention Prediction from Surveillance Videos for Over-the-horizon Safety Warning. *IEEE Transactions on Intelligent Transportation Systems*. **(JCR Q1 | IF=8.5) (First author, Published)**
- **Wei Zhou**, Chen Wang, Jingxin Xia, Zhendong Qian, & Yuan Wu. (2023). Monitoring-Based Traffic Participant Detection in Urban Mixed Traffic: A Novel Dataset and A Tailored Detector. *IEEE Transactions on Intelligent Transportation Systems*. **(JCR Q1 | IF=8.5) (First author, Published)**
- **Wei Zhou**, Yuqing Liu, Chen Wang*, et al. "An Automated Learning Framework with Limited and Cross-Domain Data for Traffic Equipment Detection from Surveillance Videos." *IEEE Transactions on Intelligent Transportation Systems* (2022). **(JCR Q1 | IF=8.5) (First author, Published)**
- **Wei Zhou**,Chen Wang*, Yiran Ge, Lognhui Wen & Yunfei Zhan. All-day Vehicle Detection from Surveillance Videos Based on Illumination-adjustable Generative Adversarial Network. *IEEE Transactions on Intelligent Transportation Systems*. **(JCR Q1 | IF=8.5) (First author, Published)**
- **Wei Zhou**, Yunfei Zhan, Hancheng Zhang, Lei Zhao, Chen Wang*. "Road Defect Detection from On-board Cameras With Scarce and Cross-domain data." *Automation in Construction* 144 (2022): 104628. **(JCR Q1 | IF=10.3) (First author, Published)**
- **Wei Zhou**, Lei Zhao, Hongpu Huang, Yuzhi Chen, Sixuan Xu, & Chen Wang *. (2023). Automatic Waste Detection with Few Annotated Samples: Improving Waste Management Efficiency. *Engineering Applications of Artificial Intelligence*, 120, 105865. **(JCR Q1 | IF=8.0) (First author, Published)**

[1] https://www.shanghairanking.cn/rankings/bcur/2023

- **Wei Zhou**, Yifan Cui, Hongpu Huang, Haitian Huang, Chen Wang*, A Fast and Data-Efficient Deep Learning Framework for Multi-Class Fruit Blossom Detection. *Computers and Electronics in Agriculture*. **(JCR Q1 | IF=8.3) (First author， Published)**
- **Wei Zhou,** Yunhong Yu, Yunfei Zhan, Chen Wang *. A Vision-based Abnormal Trajectory Detection Framework for Online Traffic Incident Alert on Freeways. *Neural Computing and Applications*, 2022: 1-14. **(JCR Q2 | IF=6.0) (First author, Published)**
- Chen Wang, **Wei Zhou***, Junyi Yan, & Huiyao Gong. (2023). Improved Two-stream Network for Vision-based Traffic Accident Detection. China Journal of Highway and Transport, 36(5), 185. **(Top Chinese journal in transportation) (Corresponding Author, Published)**
- **Wei Zhou**, Hongpu Huang, Hancheng Zhang, Chen Wang*, Teaching Segment-Anything-Model Domain-specific Knowledge for Road Crack Segmentation from On-board Cameras. *IEEE Transactions on Intelligent Transportation Systems.* **(JCR Q1 | IF=8.5) (First author， Under Revision)**
- **Wei Zhou**, Lei Zhao, Hongpu Huang, Chen Wang*, Object Detection on Construction Sites: A Flexible Framework Using Reweighting Mechanism and Contrastive Learning. *Engineering Applications of Artificial Intelligence*. **(JCR Q1 | IF=8.0) (First author， Under Review)**

➢ Academic conference (*Only listed the first author*)

- Transportation Research Board- Annual Meeting, Washington, D.C., USA, 2024. **(*Oral*，First Author，Presenter)**
- Transportation Research Board- Annual Meeting, Washington, D.C., USA, 2023. **(First Author， Presenter)**
- Transportation Research Board- Annual Meeting, Washington, D.C., USA, 2022. **(First Author， Presenter)**
- World Transport Convention, Wuhan, China, 2023. **(First Author， Presenter)**
- World Transport Convention, Wuhan, China, 2022. **(First Author， Presenter， Excellent Paper Award)**
- World Transport Convention, Wuhan, China, 2022. **(First Author， Presenter， Excellent Paper Award)**
- The Second Academic Forum on Digital Transportation and Intelligent Travel，Guilin, China, 2023.**(First Author， Excellent Paper Award)**

➢ Invention Patents

- Vehicle Detection Device and Method Based on Artificial Magnetic Field, Granted, June 2021
- Tunnel Vehicle Detection Device and Method Based on Airflow Changes, Granted, September 2021
- Lane-Specific Vehicle Counting Method Based on YOLO V4 and DeepSORT, Disclosed
- Traffic Participant Detection Method in Complex Traffic Environments Based on Surveillance Video, Disclosed
- All-Weather Vehicle Detection Method Based on One-to-Many Adversarial Networks, Disclosed
- Road Traffic Accident Detection Method Based on Visual Attention Mechanism and ConvLSTM Network, Disclosed
- Improved Dual-Stream Traffic Accident Detection Method, Disclosed
- Traffic Congestion Detection in Road Networks Based on Multi-Weight Graph 3D Convolution, Disclosed
- Road Defect Detection Method Based on Cross-Domain Data Learning with Limited Samples, Disclosed
- Driving Style Change Prediction Method Integrating Evolutionary Game Theory and Machine Learning, Disclosed
- Resilience Assessment Method for Urban Road Traffic Networks in Response to Emergency Events, Disclosed

Research Projects

2023-Present	National Key R&D Program	Technology for Rapid Recovery and Control of Urban Traffic in Accident Environment Based on Artificial Intelligence	**Lead of Perception Technology, responsible for rapid video accident detection technology research and application**

2020-2023	National Natural Science Foundation	General Project Stability and Safety Risk Identification and Multi-Objective Cooperative Optimization of Intelligent Intersection Connected Mixed Vehicle Queue	**Perception Technology Lead, involved in research on detection of traffic participants**
2019-2020	National Key R&D Program	Key Technologies and Equipment for Emergency Handling of Road Traffic Accidents in a Multi-Source Information Environment	**Main participant, involved in research on video accident detection and traffic flow statistics**
2019-2021	Provincial and Ministerial Level Project	Joint Development of Intelligent Perception and Evaluation System for Urban Road Traffic Flow in Complex Environments	**Main participant, involved in research on traffic volume statistics and congestion identification**
2022	High-Tech Enterprise Entrusted Research Project	Smart Highway Digital Twin and Simulation System	**Main participant, involved in research on SLAM 3D mapping and other technologies**
2022	High-Tech Enterprise Entrusted Research Project	Top-Level Planning of Smart Transportation and Key Technology Research of Smart Highway in Qidong City	**Lead of Perception Technology, responsible for multi-source data collection and perception technology research**
2021-2023	Major Project of Purple Mountain Laboratory	Intelligent Traffic Management and Service Technology in Intelligent Networked Environment	**Lead of Perception Technology, responsible for 2D/3D traffic participant detection technology research and result transformation**
2020	Special Sub-Project of Jiangsu Provincial Department of Transportation	All-Weather Traffic Operation Monitoring and Identification Technology Based on Deep Learning	**Lead of Perception Technology, responsible for research on abnormal detection of bridge roadways**

Awards

2023.10	Graduate National Scholarship (Ph.D.)
2023.10	"Academic Innovation" Advanced Individual of Southeast University
2023.10	First Prize of Southeast University Academic Scholarship (***Rank: 1/92***)
2023.09	First Prize for Outstanding Paper at the 2nd Digital Traffic and Smart Mobility Academic Forum
2022.12	Recipient of "Excellent Paper" at the 2022 World Transportation Congress
2022.12	Recipient of "Excellent Paper" at the 2022 World Transportation Congress
2018.06	Second Prize in the National Traffic Science and Technology Competition for College Students
2018.04	First Prize in the Jiangsu Province Traffic Technology Competition
2017.12	First Prize in the Jiangsu Province Smart Transportation Innovation and Entrepreneurship Competition

Academic

participation

Digital Transportation and Safety	Journal	Young Editorial Board Member
IEEE Transactions on Intelligent Transportation Systems	JCR Q1	Reviewer
IEEE Transactions on Vehicular Technology	JCR Q1	Reviewer
Accident Analysis and Prevention	JCR Q1	Reviewer
Advanced Engineering Informatics	JCR Q1	Reviewer
Engineering Applications of Artificial Intelligence	JCR Q1	Reviewer
Neural Networks	JCR Q1	Reviewer
Journal of Cleaner Production	JCR Q1	Reviewer

Academic Promotion

2020.12-Present	Created WeChat public account "Deep Traffic", currently with 4,500+ followers
2019.12-Present	Shared over 75+ articles on visual perception technology on Zhihu (China's most famous knowledge sharing platform), with over 2 million views and 10,000+ followers