

Qianqian Jin, Ph.D.

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Safety research Ph.D. with deep expertise in quantitative risk assessment and surrogate safety measures across diverse traffic scenarios. Spearheaded the development of analytical frameworks by integrating large-scale traffic datasets to proactively assess and mitigate conflict risks. Strong track record of cross-functional collaboration with academic and industrial teams to deliver data-driven safety insights for intelligent safety systems.

Skills & Abilities

- ✓ Programming Language: Python, R, SQL
- ✓ Machine Learning Frameworks: Pytorch, Scikit-learn
- ✓ Modeling Techniques: Statistical Models, Machine Learning Model, Deep Learning Model

Professional Experience

RESEARCH ASSISTANT | XIAMEN UNIVERSITY OF TECHNOLOGY (SEP. 2018 – MAY. 2022)

- Led and implemented a Monte Carlo–Markov chain hybrid model to forecast intersection-level crash risk probability between vulnerable road users (VRU) and vehicles, informing collision avoidance strategy design (**Toyota Motor Corporation project**, 250,000 RMB, Co-author, published)
- Served as the primary data analyst for pre-crash vehicle-VRU scenarios, delivering robust and structured datasets to enable K-medoids clustering for AEB system validation. (**Toyota Motor Corporation project**, Co-author, published)

RESEARCH ASSISTANT | UNIVERSITY OF CENTRAL FLORIDA (AUG. 2022 – CURRENT)

- Pioneered conflict risk quantification under varying weather conditions using extreme value theory (EVT), improving risk threshold interpretation for AV safety systems (First author, published)
- Designed the first analytical framework combining safety metrics and EVT to assess right-turn vehicle-pedestrian conflict risks, uncovering potential factors leading to crashes. (First author, under review)
- Engineered a ResNet-based vision pipeline to classify conflict scenarios from CCTV data, achieving 91% accuracy in pedestrian-vehicle conflict detection.

Publications

- **Jin, Q.**, Abdel-Aty, M., Tang, S. (2025). Assessing Conflict Likelihood and its Severity at Interconnected Intersections: Insights from Drone Trajectory Data. *AAP (QI)*
- **Jin, Q.**, Abdel-Aty, M., Ugan, J., Islam, Z., & Zheng, O. (2024). Identifying the Threshold Discrepancy of Rear-End Conflicts under Clear and Rainy Weather Conditions Using Trajectory Data. *TRR*
- Pan, D., Han, Y., **Jin, Q.**, Wu, H., & Huang, H. (2021). Study of typical electric two-wheelers pre-crash scenarios using K-medoids clustering methodology based on video recordings. *AAP (QI)*
- Pan, D., Han, Y., **Jin, Q.**, Kan, J., Huang, H., Mizuno, K., & Thomson, R. (2023). Probabilistic Prediction of Collisions Between Cyclists and Vehicles Based on Uncertainty of Cyclists' Movements. *TRR*

Educations

- ❖ Ph.D., Civil Engineering | Expected May 2025 | University of central Florida | Orlando, Florida
 - **Focus: Intelligent Transportation System, Traffic Safety Modeling, Quantitative Conflict Risk**
- ❖ Master, Automotive Engineering | June 2021 | Xiamen University of Technology, Xiamen, China
 - **Focus: Crash Reconstruction, Quantification Crash Risk, VRU safety**
- ❖ Online Course: Automotive Software Functional Safety – ISO 26262