Miao zujia

(+86)13042803970 | miuzujia2018@gmail.com | Shenzhen, Guangdong, China

Education

University of Chinese Academy of Sciences(Shenzhen Institute of Advanced Technology) *Shenzhen*

M.S. in Computer Technology Sep. 2021 - Jun. 2024

GPA:3.42; Research Interests: Sensor attacks pose a serious threat to autonomous driving perception systems. Multi-sensor fusion techniques and anomaly detection algorithms are used to monitor the inconsistency of sensor data to achieve attack detection and localization. Vehicle dynamics are modeled and machine learning algorithms are combined to achieve data recovery. Finally, a real-time, high-precision attack detection and defense method for perception systems is proposed.

Hefei University of Technology (School of Automotive and Transportation Engineering) *Hefei*

B.S. in Vehicles Engineering Sep. 2013 - Jun. 2017

Thesis: Simulation Analysis of Vehicle Longitudinal Model Modal Parameters Identification; Research Interests: Experimental modal analysis is performed on the vehicle longitudinal model to identify the modal parameters of the vehicle and perform simulation analysis.

Publications and Invention Patents

[1] **Miao Zujia** , Yunduan Cui, Beizhang Chen, Huiyun Li, and Cuiping Shao,“ A Real-Time Attack Detection and Defense Method for Localization System of Autonomous Vehicles.” *IEEE Transactions on Dependable and Secure Computing*. Under review. submited in June, 2023.(IF=7.2,JCR Q1)

[2] Shao, Cuiping, **Zujia Miao**, Beizhang Chen, Yunduan Cui, Huiyun Li, and Hongfeng Shu. “An Attack Detection Method Based on Spatiotemporal Correlation for Autonomous Vehicles Sensors.” *In 2022 IEEE 25th International Conference on Intelligent Transportation Systems (ITSC)*, pp. 2187-2193. IEEE, 2022.

[3] Shao, Cuiping, Beizhang Chen, **Zujia Miao**, Yunduan Cui, and Huiyun Li. “Anomaly recognition method of perception system for autonomous vehicles based on distance metric.” *Electronics Letters* 58, no. 20 (2022): 774-776.(IF=1.1,JCR Q3)

[4] Shao, Cuiping, Huiyun Li, Guanghua Du, Jinlong Guo, **Zujia Miao**, and Hongmei Zhu. “Fault Tolerance Method for Memory Based on Inner Product Similarity and Experimental Study on Heavy Ion Irradiation.” *Journal of Circuits, Systems and Computers* 31, no. 18 (2022): 2240006.(IF=1.3,JCR Q3)

[5] Shao, Cuiping, **Zujia Miao**, Huiyun Li, et al.Autopilot-based attack detection method, terminal device, and storage medium.CN202211001009.5, 2023-07-05.

[6] Shao, Cuiping, **Zujia Miao**, Huiyun Li, et al.Autopilot-based data recovery method, terminal device, and storage media.CN202211001014.6, 2023-07-05.

[7] **Zujia Miao**, Shao, Cuiping, Huiyun Li, et al.Attack detection method, device, apparatus and storage medium for automated driving system.CN202310584658.0, 2023-05-23.

Research Project

Research on Chip Irradiation Reliability Detection Method Based on Compressed sensing *Shenzhen*

National Natural Science Foundation of China (Nos. 62004212) Dec. 2020 - Dec. 2023

- Be responsible for drawing, text polishing, and formatting modifications and conducting research background data research
- Be responsible for research on perception system attack detection and defense, resulting in two SCI papers

Work Experiment

National Car Quality Supervision and Inspection Center *Xiangyang*

Automotive Performance Research and Development Engineer July. 2017 - June. 2020

- Carry out vehicle dynamics performance simulation and development tasks.
- Manage the experimental team and oversee the completion of road test tasks for Dongfeng Fengshen’s L2-level ADAS function vehicle, Yixuan, in 2020.

Technical Skills

Programming Matlab, C++, Python, ROS

Languages CET4-506, CET6-418, TOEIC-625, IELTS-6.0.

Awards

Dec. 2016 **Scholarship**: Academic Scholarship *Hefei*