Zhenkun Zhu

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EDUCATION

University of Science and Technology of China — Hefei, China

Master of Engineering in Control Science and Engineering — 09/2020 - 06/2023

- GPA: 3.67/4.3

Soochow University — Suzhou, China

Bachelor of Engineering in Electrical Engineering and Automation — 09/2016 - 06/2020

- GPA: 3.9/4.0
- Ranking: 1/70

RESEARCH

Projects

Navigation of intelligent vehicle for on-campus unmanned designated delivery — 04/2021 to present

Postgraduate Investigator (Supervised by: Professor Zonghai Chen)

- Conducted the calibration of lidar and camera and that of lidar and RTK, providing the basis for multi-sensor fusion on the vehicle through the lab's intelligent vehicle platform
- Participated in the lab's follow-up intelligent vehicle navigation process based on the global map provided by RTK and the local map established upon lidar SLAM

Workpiece recognition and grabbing — 09/2021 - 04/2022

Postgraduate Investigator (Supervised by: Professor Zonghai Chen)

- Trained the workpiece recognition network based on YOLO, providing reliable location information for precise localization and grabbing that follows

Speech signal secure communication mechanism based on hyperchaos observation — 09/2017 - 09/2018

National Natural Science Foundation of China project

Principal Investigator/Manager (Supervised by: Associate Professor Jun Huang)

- Published State Estimation for One-Sided Lipschitz System with Markovian Jump Parameters (EI-indexed) as the first author

Publications

- **Z. Zhu,** J. Wang, J., Xu, M., & Chen, Z. (2022). Rein-SLAM: Narrow the gaps between the matching task and SLAM system. in IEEE Transactions on Industrial Electronics, 2022.
  https://ieeexplore.ieee.org/document/9942940
- **Zhu, Z.**, Wang, J., Xu, M., Lin, S., & Chen, Z. (2022). InterpolationSLAM: An effective visual SLAM system based on interpolation network. Engineering Applications of Artificial Intelligence, Volume 115, 2022, 105333.
  https://doi.org/10.1016/j.engappai.2022.105333
- **Zhu, Z.**, Dai, D., Wang, J., Chen, Z. (2021). Survey of Feature-Based Visual SLAM. Proceedings of the 22nd Chinese Conference on System Simulation Technology and Its Application (*CCSSTA 2021*). DOI: 10.26914/c.cnkihy.2021.059211 (sponsored by National Natural Science Foundation of China)
- **Zhu, Z.**, Dai, D., Wang, J., Chen, Z. (2020). Design of multi-object tracking algorithm based on Faster R-CNN. Proceedings of the 21st Chinese Conference on System Simulation Technology and Its Application (*CCSSTA 2020*). DOI: 10.26914/c.cnkihy.2020.021706

- **Zhu, Z.**, Huang, J., Yang, M. (2020). State Estimation for One-Sided Lipschitz System with Markovian Jump Parameters. In: Jia, Y., Du, J., Zhang, W. (eds) Proceedings of 2019 Chinese Intelligent Systems Conference. (*CISC 2019*). Lecture Notes in Electrical Engineering, vol 592. Springer, Singapore. https://doi.org/10.1007/978-981-32-9682-4_52

P.R.C. Patents
- Invention Patent: Monocular Visual SLAM Localization Method based on Deep Learning (Publication Code: CN112767480A)
- Invention Patent: Visual SLAM Method and System based on Interpolation Network (Publication Code: CN114897975A)
- Invention Patent: SLAM Method, System, Device, and Medium for Storage based on Feature Matching Network (Publication Code: CN114608558A)
- Utility Patent: Rotation Gear of Computerized Numerical Control (Publication Code: CN209811734U)

Technical Skills
- ➢ Programming Languages: C, C++, Python
- ➢ Machine Learning Techniques: PyTorch, TensorFlow
- ➢ Development Platforms: Robot Operating System (ROS), Ubuntu
- ➢ Hardware Platforms: STM32, NVIDIA Nano
- ➢ Miscellaneous: OpenCV, Eigen, G20, MATLAB, PointCloud

ACTIVITIES

Jiangsu Undergraduate Robot Competition   09/2019 - 10/2019
Leader (Supervised by: Dr. Yu Gao)
- Mobile localization and obstacle avoidance algorithm development of intelligent vehicle

National Undergraduate Engineering Training Integration Ability Competition   09/2018 - 06/2019
Leader (Supervised by: Dr. Hong Tan)
- Mobile localization and robotic arm control algorithm development of intelligent logistics vehicle

SJEC Corporation, Suzhou, China   08/2018
Visiting Internship
- Familiarized with the practical application of such devices as three-phase AC electromotor, relay, and PLC
- Observed the techniques and processes of elevator manufacture

AWARDS

❖ First-Class Scholarship of University of Science and Technology of China	09/2022
❖ First-Class Scholarship of University of Science and Technology of China	09/2021
❖ First-Class Scholarship of University of Science and Technology of China	09/2020
❖ Excellent Graduate of Soochow University	06/2020
❖ 2nd Runner-up of Jiangsu Undergraduate Robot Competition	10/2019
❖ 2nd Runner-up of National Undergraduate Engineering Training Integration Ability Competition	06/2019
❖ 1st Runner-up of Jiangsu Undergraduate Engineering Training Integration Ability Competition	04/2019
❖ Soochow University Scholarship sponsored by Suzhou Recodeal Interconnection System Co,.Ltd.	12/2018
❖ Soochow University Academic Distinction Scholarship	12/2018
❖ Soochow University Scholarship sponsored by Sumitomo Electric Industries	12/2017
❖ Soochow University Academic Distinction Scholarship	12/2017