Jiajun Jiang

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🎓 Education

Zhejiang University   09/2019 – 07/2022
Master in Control Science and Engineering, GPA 84.2/100.

University of California, Davis   07/2018 – 09/2018
Research Intern, Supervised by Prof. S.J. Ben Yoo.

University of California, Berkeley   06/2017 – 08/2017
Visiting Student, Summer Session 2017.

Zhejiang University   09/2015 – 07/2019
Bachelor in Automation + English Language and Literature, GPA: 86.6/100.

🧩 Experience

Autonomous Driving Lab, Alibaba DAMO Academy, China   07/2022 – present

Algorithm Engineer   Localization Group. Supervised by: Dr. Sheng Yang

Algorithms development for autonomous truck system in highway scenario.

- Development of a trailer yaw estimation algorithm for the autonomous tractor-semitrailer system based on a one-dimensional histogram filter. The filter utilizes LiDAR pointcloud as observation and kinematic model as prediction.
- Online calibration parameter check algorithm between multiple LiDAR by checking both pointcloud and pose quality.
- Design and implement a lightweight storage method for long-distance pointcloud map, inspired by Universal Transverse Mercator projection and image compression algorithms.

Autonomous Driving Lab, Alibaba DAMO Academy, China   04/2021 – 09/2021

Internship   Localization Group. Supervised by: Dr. Mingyang Li

Calibration method development of autonomous logistics robot on courier stations.

- Develop a fast LiDAR-camera calibration check scheme using semantic segmentation of people.
- Design and implement a calibration process for LiDAR and camera systems at courier stations, utilizing a purpose-built calibration board.

Intelligent Autonomous System Lab, Zhejiang University, China   09/2019 – 06/2022

Master Student   Supervised by: Prof. Yu Zhang

. Development of a thermal SLAM system under challenging illumination conditions.

- Purpose an SVD-based image processing method is proposed to improve image quality on low-contrast thermal images for SLAM by singular value reallocation.
- Develop a real-time optical flow network architecture on thermal images for data association.
- One of the contributors to the open-source multi-spectral dataset.

Intelligent Autonomous System Lab, Zhejiang University, China   09/2018 – 05/2019

Bachelor Thesis   Supervised by: Dr. Weichen Dai and Prof. Yu Zhang.

Development of a calibration system for multi-spectral sensors.

- Design and implement a special checkerboard for the calibration between the thermal camera and visible light camera.
- Develop a calibration method between LiDAR and visible light camera using calibration board with circlar holes.

Hardware Section, Team ZJUDancer, Zhejiang University, China   03/2017 – 07/2019
Circuit Group Leader
Circuit system development for humanoid kid-size soccer robots
- Design the schematic diagram and PCB board for servo signal transmission and foot sensor modules.
- Assemble and maintain the circuit system in daily routine and during the competition.

▤ PUBLICATIONS

1. **J. Jiang**, X. Chen, W. Dai, Z. Gao and Y. Zhang, *Thermal-Inertial SLAM for the Environments With Challenging Illumination*, in IEEE Robotics and Automation Letters, vol. 7, no. 4, pp. 8767-8774, Oct. 2022
2. X. Chen, W. Dai, **J. Jiang**, B. He and Y. Zhang, *Thermal-Depth Odometry in Challenging Illumination Conditions*, in IEEE Robotics and Automation Letters, vol. 8, no. 7, pp. 3988-3995, Jul. 2023

🏷 PATENTS

1. Y. Zhang, W. Dai, **J. Jiang**. Map Segmentation Method And Device, Motion Estimation Method, And Device Terminal. US Patent, US20210312637A1.
2. Y. Zhang, Z. Gao, **J. Jiang**. Long-wave Infrared Image Denoising Method. Chinese Patent, CN115034992A.

⚙ SKILLS

- Programming Language: C/C++, Python, LaTeX, Shell.
- Software: ROS, Git, MATLAB, Altium Designer, Keil

♡ HONORS AND AWARDS

RoboCup World Humanoid KidSize League, 2nd Place	2019, Sydney, Australia
RoboCup German Open Humanoid KidSize League, 2nd Place	2019, Magdeburg, Germany
Scholarship for Outstanding Students (Top 10%)	2016,2017,2018, Hangzhou, China

ⓘ MISCELLANEOUS

- HOMEPAGE: https://www.elkula.com
- GITHUB: https://github.com/Elkulas
- BILIBILI: https://space.bilibili.com/8332491
- LANGUAGES: Mandarin - Native speaker, English - Fluent (TOFEL 101 in 2018)
- HOBBIES: Saxophone, Bikepacking, Mountain Biking, Chinese Walnuts

☎ REFEREES

Academia:
- Dr. Yu Zhang, Associate Professor, Zhejiang University: zhangyu80@zju.edu.cn
- Dr. Weichen Dai, Associate Professor, Hangzhou Dianzi University: weichendai@hdu.edu.cn

Industry:
- Dr. Mingyang Li, Software Engineering Manager, AR Perception Team, Google: mingyangli009@gmail.com
- Dr. Xiao Hu, Algorithm Expert, Autonomous Driving Lab, Alibaba Group: hux062303@gmail.com