

JIAJUN JIANG

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🎓 EDUCATION

Zhejiang University 09/2019 – 07/2022

Master in Control Science and Engineering, GPA 84.2/100.

Master Thesis: Visual Inertial System Based on Long-Wave Infrared Cameras

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.

Chu Kochen Honors College

🏢 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.
- 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.

- 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 circular holes.

Circuit Group Leader

Circuit system development for humanoid kid-size soccer robots

- Design the schematic diagram and PCB board of foot sensor modules for humanoid robots.
- Develop the firmware for foot pressure data collection and servo data transmission.
- 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, L^AT_EX, 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>
- LANGUAGES: Mandarin - Native, English - Fluent (TOFEL 108 in August 2023)
- 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