# 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 – now
*Localization Algorithm Engineer*   Localization Group.

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 – 08/2021
*Internship*   Localization Group.

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 cameras on courier stations with a designed 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.

- 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: 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 ArUco marker.

## 📖 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

- C/C++, Python, Matlab, ROS, OpenCV, PCL, GIT, Pytorch.

## ♡ Honors and Awards

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| 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 |

## ℹ Miscellaneous

- Homepage: https://www.elkula.com
- GitHub: https://github.com/Elkulas
- Languages: Mandarin - Native speaker, English - Fluent (TOFEL 101 in 2018)
- Hobbies: Saxophone, Bikepacking, Mountain Biking, Chinese Walnuts