

Jia Yansong

✉ jiaYansong@u.nus.edu 📞 SG: +65 87787536 CN: +86 15840817082 🗣️ Jys997760473
in LinkedIn 🌐 Website 📄 JYS997760473

EDUCATION

- **National University of Singapore** Singapore
Master of Science in Mechanical Engineering Aug 2022 – Jan 2024
 - **GPA:** 4.56/5.0
 - **Course Taken:** Linear System, Computer Control System, Machine Vision, Deep Learning for Robotics, Neural Network, Autonomous Mobile Robotics
- **National University of Singapore Research Institute (Suzhou)** Suzhou, China
Exchange student Sep 2021 – May 2022
- **Hunan University** Changsha, China
Bachelor of Mechanical design and manufacturing and automation Sep 2018 – Jun 2022
 - **GPA:** 3.44/4.0
 - **Awards:**
 - * Sheng Shijing Undergraduate International Exchange Special Class A Scholarship
 - * 2019-2020 Champion of Hunan Province University Football League

PUBLICATION

RCBEVD: Radar-Camera Fusion in Bird's Eye View for Detection with Velocity Estimation *Jia, Yansong; Lee, Christina Dao Wen; Ang Jr, Marcelo H (National University of Singapore, Singapore)*

WORK EXPERIENCE

- **Venti Technologies** Singapore
Research and Software Intern in Perception Team May 2023 – Present
 - **Curb Detection:**
 - * Develop an annotation toolbox based on ImGUI and VulkanSceneGraph for people to annotate the curb.
 - * Extract the Lidar Point Cloud feature and convert the Lidar Point Cloud to pseudo images from the top-down view.
 - * Train the UNet network based on our curb dataset.
 - **Traffic Light Detection Evaluation:**
 - * Receiving V2I and auto-aligning V2I with traffic light detection results on timestamp level to evaluate detection results.
 - **Online Traffic Light Raw Image Collection:**
 - * Online auto-collecting specific raw traffic light images.

RESEARCH EXPERIENCE

- **Radar-Camera Fusion Detection with Velocity Estimation** Aug 2022 – Apr 2023
NUS Advanced Robotics Center Supervisor: Professor Marcelo H Ang Jr
 - **Status:** Accepted for IAS-18 (The 18th International Conference on Intelligent Autonomous Systems in Suwon, Korea).
 - **Contributions:**
 - * Develop a novel clustering method for radar point clouds.
 - * Estimate the true velocities of radar points by designing and using a tracking algorithm.
- **Radar based Multi-object Tracking for Self-driving Vehicles** Sep 2021 – May 2022
NUSRI (Suzhou) Supervisor: Professor Marcelo H Ang Jr

- **Methods:** Applying Kalman Filter as the prediction algorithm, and Hungarian algorithm as the assignment algorithm.
- **GitHub Address:** <https://github.com/JYS997760473/Multi-Object-tracking-2D.git>

- **Hunan University RUISU Racing Team frame design and manufacturing** Sep 2018 – May 2019
Hunan University
 - **Introduction:** Using UG and AutoCAD to model the whole frame of the racing.

COURSE PROJECTS

- **EE5103: Computer Control System:** <https://github.com/JYS997760473/NUS-EE5103-Project>
- **EE5101/ME5401: Linear System:** <https://github.com/JYS997760473/NUS-EE5101-ME5401-Project>
- **EE590904/ME5404: Neural Network:** <https://github.com/JYS997760473/NUS-ME5404-EE5904-Projects>
- **ME5406: Deep Learning for Robotics:** <https://github.com/JYS997760473/NUS-ME5406-Project1>
- **ME5413: Autonomous Mobile Robotics:** <https://github.com/JYS997760473/NUS-ME5413-Projects>

PROFESSIONAL SKILLS

- **Languages:** C++, C, Python, MATLAB, Shell
- **Platforms:** ROS1, ROS2, Linux
- **Technical Tools:** Git, Docker, CMake, Catkin, Bazel, Simulink
- **Frameworks:** Pytorch, ImGUI, Vulkan
- **Modern Control System:** MPC, LQR, PID
- **Deep Learning:** Yolo, PointPillars, Voxlnet, CenterNet, CenterFusion, RCNN
- **Machine Learning:** SVM, KNN, K-means
- **Reinforcement Learning:** Q-Learning, SARSA

ACTIVITIES

- **Member of Hunan University Football Team** 2019 – 2021
- **Member of Hunan University Ruisu racing team** Sep 2018 – May 2019

HOBBY

- **Soccer/Football**