

# YANG ZHOU

## EDUCATION

**New York University**, Ph.D. in Electrical Engineering Aug. 2019 – Present  
**ShanghaiTech University**, B.E. in Computer Science and Technology Sep. 2015 – Jul. 2019

## PUBLICATION

Yang Zhou, Jiahong Xiao, Yue Zhou, Giuseppe Loianno, “**Multi-robot Collaborative Perception with Graph Neural Networks**”, IEEE Robotics and Automation Letters, vol. 7, no. 2, pp. 2289–2296, 2022  
 Rundong Ge\*, Moonyoung Lee\*, Vivek Radhakrishnan, Yang Zhou, Guanrui Li, Giuseppe Loianno, “**Vision-based Multi-Object Detection and Tracking for Micro Aerial Vehicles**”, 2022 IEEE/RSJ International Conference on Intelligent Robots and Systems  
 Can Cui, Yunsheng Ma, Xu Cao, Wenqian Ye, Yang Zhou, Kaizhao Liang, Jintai Chen, Juanwu Lu, Zichong Yang, Kuei-Da Liao, Tianren Gao, Erlong Li, Kun Tang, Zhipeng Cao, Tong Zhou, Ao Liu, Xinrui Yan, Shuqi Mei, Jianguo Cao, Ziran Wang, Chao Zheng, “**A Survey on Multimodal Large Language Models for Autonomous Driving**”, Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) Workshops, 2024, pp. 958-979  
 Yang Zhou, Rundong Ge, Gary Mcgrath, Giuseppe Loianno, “**FENet: Fast Real-time Semantic Edge Detection Network**”, IEEE International Symposium on Safety, Security, and Rescue Robotics, 2020, pp. 246-251  
 Mattia Secchiero, Nishanth Bobbili, Yang Zhou, Giuseppe Loianno, “**Visual Environment Assessment for Safe Autonomous Quadrotor Landing**”, 2024 International Conference on Unmanned Aircraft Systems (ICUAS)  
 Yang Zhou, Giuseppe Loianno, “**PENet: A Joint Panoptic Edge Detection Network**”, arXiv preprint arXiv:2303.08848  
 Yang Zhou, “**Extrinsic Calibration Algorithm between a Stereo Visual System and a 3D LiDAR**”, Carnegie Mellon University Robotics Institute Summer Scholars Working Papers Journal, 2018

## RESEARCH EXPERIENCE

Research Interest: **Multi-robot Perception, Scene Understanding, SLAM, Robotics, Computer Vision**  
**Agile Robotics and Perception Lab**, New York University Brooklyn, USA  
*Research Assistant*, supervised by Prof. *Giuseppe Loianno* Aug. 2019 – Present

- Proposed novel real-time semantic edge detection and panoptic edge detection network.
- Proposed multi-robot collaborative perception framework with graph neural networks.
- Proposed multi-robot collaborative perception dataset in the wild.
- Proposed semantic-guided UAV autonomous landing system.
- Proposed multi-robot relative localization with learning-based detection and filter-based tracking.
- Developed real-time stereo visual inertial state estimation onboard system running at 90Hz.
- Developed ROS2 autonomy pipeline including control and planning modules.

**Robot Perception Lab**, Carnegie Mellon University Pittsburgh, USA  
*Undergraduate Research Intern*, supervised by Prof. *Michael Kaess* Jun. 2018 – Dec. 2018

- Proposed novel intrinsic and extrinsic calibration algorithm between stereo camera and 3D LiDAR.

**Mobile Perception Lab**, ShanghaiTech University Shanghai, China  
*Bachelor Thesis*, advised by Prof. *Laurent Kneip* and Prof. *Michael Kaess* Oct. 2018 – June. 2019

- Proposed novel pipeline of Stereo Event-based Visual Inertial Odometry.

## WORKING EXPERIENCE

**Microsoft Research**, Microsoft Redmond, USA  
*Research Intern* Jun. 2022 – Aug. 2022

- Developed perception-aware planning system in Hololens team.

**Tencent United Security Laboratory**, Tencent Inc. Shanghai, China  
*Security Researcher* Aug. 2017 – Dec. 2017

- Analyzed perception system of autonomous driving vehicle in security research.
- Proposed adversarial attack method to evaluate the robustness of the visual perception system.

## PROJECT & LEADERSHIP EXPERIENCE

**ShanghaiTech RoboMaster Team** Shanghai, China  
*Captain, Founder* Oct. 2017 – May. 2018

- Led a team of 35 to build 6 robots with perception, planning, and decision-making systems

**ShanghaiTech Undergraduate RoboCup Rescue Team** Shanghai, China  
*Leader of Computer Vision group, Co-founder* Feb. 2017 – Apr. 2018

- Developed LiDAR and RGB-D based SLAM system and motion detection system.

**SKILLS** Languages: C++, Python, Rust Tools: ROS 1/2, PyTorch, Eigen, OpenCV, OpenGV