Javier Yu

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Education

PhD & MS Aeronautics and Astronautics, Stanford University — Sep. 2018 - Nov. 2024
Advisor: Mac Schwager, NSF Graduate Research Fellowship

B.S. Mechanical Engineering, SUNY University at Buffalo — Sep. 2014 - May 2018
Minors: Mathematics and Computer Science

Work Experience

Deep Learning Intern - Skydio — Spring 2025
San Mateo, CA

- Implemented a system for detecting dangerous flight conditions using onboard cameras and zero-shot/few-shot approaches with multi-modal foundation models.
- Created large scale data curation and model evaluation workflows, and deployed and profiled solutions for on-vehicle inference using TensorRT compilation.

Head Course Assistant - AA274a Principles of Robot Autonomy — Fall 2023
Stanford University

- Lead development of updated course materials including migrating course codebase from ROS1 to ROS2, and managed a seven person teaching team.
- Maintained a fleet of TurtleBot3 robots with NVIDIA Jetson onboard computers, and organized and conducted lab sections with a course size of 170+ students.

Research Experience

Quadrotor Visual Navigation and Manipulation — 2024 - 2025
Research Scientist, Stanford University

- Developed a simulation framework that enables large scale photorealistic data generation for training of agile and robust quadrotor visual navigation policies.
- Explored using multi-modal foundation models, fine-tuned with human demonstration data, as control policies for manipulator augmented quadrotors.

Online Gaussian Splatting Mapping — 2022 - 2025
Doctoral Researcher, Multi-robot Systems Lab, Stanford University

- Designed a Pytorch integrated ROS utility, SplatBridge, that enables real-time construction of Gaussian Splats with inputs from a range of sensing modalities.
- Demonstrated safe quadrotor teleoperation using SplatBridge's high-fidelity mapping capability to generate real-time action safety filters.
- Open-source code has over 200+ stars on Github, and was successfully deployed during a live, outdoor demonstration for DARPA/Intel to showcase mapping capabilities of a camera equipped quadrotor networked with 5G.

Skills

Programming Languages: Python (Adv.), C++ (Int.), MATLAB (Int.), Julia (Int.)
Libraries & Software: Linux, ROS, PyTorch, CUDA, OpenCV, Matplotlib, LaTeX
Relevant Coursework: Machine Learning, Convex Optimization I/II, Reinforcement Learning, Meta Learning, ML under Distribution Shift, Large Scale Matrix Computation