Tam (Jimmy) Tran

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[U.S. CItizen]

Aspiring roboticist with expertise in software and hardware integration. Passionate about developing robotic systems for space exploration, and advancing the future of space infrastructure.

EDUCATION & ACADEMICS

- Princeton University *(expected conferral in May 2025)* Class of 2025
    - B.S.E. Candidate, Mechanical and Aerospace Engineering, GPA: (3.5)
    - Certificate in Robotics and Intelligent Systems

WORK EXPERIENCE

Robotics Software Intern, Pliant Energy Systems May 2024 - August 2024

- Worked on software stack for C-Ray, a robotics platform designed to traverse challenging 'wet' environments (sea, beach, ice) using undulating fins
- Completed projects:
    - 3D sonar SLAM pipeline for seabed/riverbed feature mapping to improve localization uncertainties from DVL (doppler velocity) and dead reckoning state estimates
    - MOOS app to interface sonar sensor driver
    - Communications app to broadcast data to a satellite server
    - Unit testing scripts for onboard integrated systems (sensors, drivers)

Undergraduate Researcher, Intelligent Robot Motion (IRoM) Lab January 2023 - Present

- Built AgIRoM: a UAV research platform for agile autonomous vision-based flight based on UZH Robotics and Perception Group's *Agilicious* Platform
    - Uses visual-inertial odometry for state estimation in GPS-denied environments
- Worked in a team to implement a depth-based motion planner pipeline
    - Successfully demonstrated in action via integration with an existing planner method developed by graduate researchers in IRoM Lab
- *Interned Full-Time during Summer 2023*

EXTRA-CURRICULAR ACTIVITIES AND PROJECTS

Drone Team Lead, Princeton Robotics Club September 2021 – May 2023

- Led a team that built a quadcopter controlled via hand gestures detected through OpenCV

Mini-TARS w/ LLM Voice Prompting December 2024 – Present

- Built a functional scaled-down replica of the robot TARS (from the movie *Interstellar*), equipped with voice commands and real-time interaction with a locally running language model

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SKILLS & PERSONAL INTEREST

- Technical Skills:
    - *Software skills: C++, Python, ROS, Docker, OpenCV, Pointcloud Library, SLAM, MOOS-IvP, MATLAB, Simulink*
    - *Hardware skills: Flight Controllers, NVIDIA Jetson, Visual Inertial Odometry Cameras, Stereo Depth Cameras, Optical Flow Sensors, Sonar Sensors*
    - *Rapid prototyping: CAD (Fusion360, PTC Creo), 3D printing, Soldering, Machine Shop*
- Interpersonal skills:
    - *Adaptable, Communication, Leadership, Proactive*