Ryan **Yueqian Liu**

MSc Student Aerospace Engineering | TU Delft

About me

I'm a Master's student at TU Delft looking for an intern position starting in the summer of 2023. I have 5+ years of experience designing, coding, and simulating autonomous micro-flying vehicles. With a strong background in control science, robotics, and computer vision, I'm advancing further in building robust and smart brains for aircraft/vehicles/robots. Now, my main interests are 3D vision, ML/AI, SLAM, and perception-related algorithms.

Contact

Born on 04/08/2000

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ryan-yql

Languages

English - Professional Knowledge

Chinese - Native Language

Skills

C++ | Python | OpenCV | Matlab | ROS | acados | Gurobi | PX4-Autopilot | Gazebo | Git | LaTeX | MS Office | Final Cut Pro

Other Interests

- Piano
- Tennis
- Badminton
- Swimming
- Drone Racing
- Flight Simulator

EDUCATION

Sept. 2022 – present

Master of Science — Delft, the Netherlands
Delft University of Technology
Aerospace Engineering
- **Specialization in Control and Simulation**: a program that focuses on developing safe and intelligent flight control/management systems
- **Relevant courses**: Machine Perception, Deep Learning, Autonomous Flight of Micro Air Vehicles, Avionics and Operations, Operations Optimization
- **Expected graduation**: July 2024

Sept. 2018 – July 2022

Bachelor of Engineering — Shenzhen, China
Harbin Institute of Technology
Mechatronics, Robotics, and Automation Engineering
- **Relevant courses**: Digital Image Processing, Machine Vision, Introduction to Mobile Robots, Introduction to Artificial Intelligence, Mathematical Robotics, Data Structure and Algorithm
- **Graduation Thesis**: Adaptive Nonlinear Model Predictive Controller for Trajectory Tracking of An Overactuated Tiltrotor Hexacopter
- **Average grade**: 88/100 Cum Laude

WORK EXPERIENCE

Mar. 2021 – Sept. 2021

Research Assistant — Shenzhen, China
nROS-lab, Harbin Institute of Technology
- **Made a drone that hovers at any attitude:** developed a novel PX4-Autopilot firmware, created a complete solution for PX4-ROS2-Gazebo simulation, built the drone from scratch
- **Role importance:** my work has also been used as a basic building component in 2 other lab projects

PUBLICATIONS

Preprint 2022

Adaptive Nonlinear MPC for Trajectory Tracking of An Overactuated Tiltrotor Hexacopter, Yueqian Liu, Fengyu Quan, Haoyao Chen, *arXiv*, doi 10.48550/arXiv.2211.06762

Preprint 2022

Collision-Free 6-DoF Trajectory Generation for Omnidirectional Multi-rotor Aerial Vehicle, Peiyan Liu, Fengyu Quan, Yueqian Liu, Haoyao Chen, *arXiv*, doi 10.48550/arXiv.2209.06764

Journal 2022

RGB-D Inertial Odometry for a Resource-Restricted Robot in Dynamic Environments, Jianheng Liu, Xuanfu Li, Yueqian Liu, Haoyao Chen, *IEEE Robotics and Automation Letters*, doi 10.1109/LRA.2022.3191193

EXTRACURRICULAR ACTIVITIES

Competitions

RoboMaster Championship: *CV engineer @ CRITICAL-HIT*
Mathematical Modeling: *State Third Prize*
Drone Delivery: *State First Prize*

Projects

VTOL UAV
Extra-long Duration Timelapse
Auto Jenga Manipulator
For more details visit my website