

Yueqian Liu (刘越千)

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EDUCATION

Harbin Institute of Technology, Shenzhen

09/2018~06/2022

- Bachelor of Engineering in Robotics and Autonomous Systems
- GPA: 88/100

University of California, Berkeley

Cancelled/COVID-19

- Admitted Visiting Student, UCB Global Access Program
- TOEFL: 110/120

RESEARCH & PROJECT EXPERIENCE

Omnidirectional Hexacopter Based Aerial Manipulator

BEng. Thesis WIP

- Implemented a dynamics-based control allocation algorithm.
- Looked into PX4 source code in depth and adapted the control pipeline for full wrench control.
- Solution feasibility was verified using PX4-SITL and Gazebo in ROS environment.
- Currently working on adaptive nonlinear model predictive control.
- Future work may include manipulator kinematics, SLAM, unified perception-planning-tracking.
- Supervisor: Prof. Haoyao Chen

Robot Navigation on Color & Perspective

11/2021~11/2021

- Use vision to guide the Dashgo robot through two traffic cones in bright color.
- Supervisor: Prof. Haoyao Chen
- Extra Links: [video demo](#), [open-source repository](#)

Hexalink Jenga Manipulator

05/2021~06/2021

- A coursework project for Mathematical Introduction to Manipulators class.
- We were required to program QKM manipulators to play Jenga automatically.
- My part was doing hand-eye calibration, blob analysis, path planning and simple UI.
- Supervisor: Prof. Yunjiang Lou
- Extra Links: [video demo](#), [open-source repository](#)

Autonomous Delivery Drone

01/2021~04/2021

- Made for National Undergraduate Engineering Training Integration Ability Competition.
- Designed UAV airframe (including cargo hold) and overall software architecture.
- Wrote code on a flight controller to execute commands received from a companion computer.
- Extra Links: [video demo](#), [structure design scheme](#), [control & electronics scheme](#)

Design and Control of A 3-Rotor VTOL UAV

02/2019~09/2019

- A project for The Freshman Year Innovation Program of HITSZ.
- Designed UAV hardware; Made a mixing unit to achieve VTOL flight and hover-fixed-wing transition.
- The mixing unit takes in PWM outputs of a basic multicopter flight controller and yields signals for VTOL actuators.
- Supervisor: Prof. Xuwei Pan
- Extra Links: [video demo](#), [technical summary](#)

AWARDS

- Second Prize, Robomaster 2020
- First Prize, Freshman Year Innovation Program Award, HITSZ 2020
- First Prize, National Undergraduate Electronic Design Contest, Guangdong 2020
- Third Prize, China Undergraduate Mathematical Contest in Modeling, Guangdong 2020
- Second Prize, Outstanding Student Scholarship, HITSZ 2020
- Third Prize, National English Competition for College Students 2019
- First Prize, The Great Bay Area Engineering Training Integration Ability Competition 2019

EXTRACURRICULAR ACTIVITIES & SKILLS

- Won team silver medal in institute badminton tournament.
- Made an active antenna tracking system for FPV fans. [Code](#) and [video demo](#) are available.
- Currently shooting a [years-long ultra-high-resolution time-lapse](#) video of the campus construction yard.
- Frequently used software: Matlab, Mathematica, Cadence, Gazebo, Solidworks, Final Cut, Procreate.
- Frequently used programming languages: C/C++, python, shell script.
- Language levels: Mandarin (Native), English (Fluent), Cantonese (Intermediate), Japanese (Beginner)