Yongye(Felix) Hu

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EDUCATION

UC Berkeley **Aug 2024 - May 2025**
- Master of Engineering (MEng) in Robotics | GPA: 3.72/4.0 Berkeley, CA
- Relevant Coursework: MPC control theory, Data Science, Product development, L.I.F.T Capstone project

Wuhan University of Science and Technology **Sep 2020 - May 2024**
- Bachelor of Mechanical Engineering | GPA: 3.56/4.0 Wuhan, CN
- Relevant Coursework: Mechanical Design, Mechanical Control Systems, Fluid Mechanics, Thermodynamics

PROJECT EXPERIENCE

L.I.F.T Platform: A Hybrid Flying and Driving Robot **Sep 2024 - Present**
Team Leader & Project Status Manager Berkeley, CA
- Led a 5-member team (software, controls, hardware) to develop a hybrid flying-driving robot; ensured on-time delivery of all milestones, handled mechanical design (SolidWorks, FEA), and integrated ROS2-based MPC flight control.
- Optimized the final design for a 17% mass reduction while maintaining structural integrity; performed thermal FEA to mitigate motor overheating via thermal washer integration.
- Implemented a complete validation pipeline—including thrust rigs, thermal tests, motor modeling, and OptiTrack feedback—to enable closed-loop pose control and system debugging.

Vacuum Clothes Dryer **Oct 2024 - Present**
Self-initiated Project Berkeley, CA
- Created a vacuum dryer enabling 20-minute drying at 40 °C with 50 dBA noise level. Refined design through 5+ SolidWorks iterations and tested 10+ FDM/SLA material combinations, cutting vacuum chamber leakage by 30%.
- Architected a magnetically coupled drive system that eliminated direct mechanical interfaces, eliminating vacuum leakage at connection points and ensuring reliable roller actuation under varying torque.
- Designed a sensor-based control interface to streamline operation and debugging, informed by FMEA on pump, heater, and motion systems under simulated drying cycles.

Multi-Robot Coordination for Retrieval & Targeting Challenge **Sep 2022 - Jul 2023**
Leader for Mechanical Group NanJing, CN
- Led mechanical design of 3 robots for a national robotics competition with 80 teams: two autonomous systems ("Elephant" and "Rabbit") for ring retrieval and launch, and a joystick-controlled quadruped for speed racing.
- Developed a steering chassis for "Elephant," boosting straight-line speed by 33%, and integrated a pneumatic reloading system in "Rabbit," enabling sub-1.5 second automated reload cycles.
- Built a quadruped racer with parallel linkage architecture, achieving stable obstacle traversal at speeds up to 10 km/h and minimizing leg-frame vibration.

Hydraulic Automation Crane Prototype **Jan 2021 - Jul 2023**
Lead Developer Wuhan, CN
- Built and programmed a compact mechatronic crane system capable of autonomous object retrieval and precise stacking, achieving a task repeatability of more than 95%.
- Upgraded the system to a hydraulic control model with a Qt-based upper computer interface, reducing control latency by 500ms. Migrated control logic to a PLC platform for compatibility with standard industrial automation workflows.

WORK EXPERIENCE

Wuhan Xiaoxian AI Technology Co., Ltd. **Sep 2023 - Mar 2024**
Mechatronics Intern Wuhan, CN
- Spearheaded an STM32F103-based embedded system for bidirectional tool communication and real-time data processing, and assessment of linear module effects on point-cloud acquisition to improve scan accuracy and repeatability.
- Engineered an encoder-triggered imaging module (magnetic-scale linear stage), boosting the capture precision by 10%.

SKILLS

- **Hardware:** FDM/SLA 3D Printing, CNC, PCB
- **Design:** SolidWorks, Inventor, Rhino, Ansys, AutoCAD, BambuStudio, Cura, Granta Selector
- **Electronics:** STM32, ESP32, Arduino, Raspberry Pi, Keil uVision 5, STM32 CubeMX, CRP2
- **Programming:** C++, Python, ROS, LaTeX, Matlab, Linux, PLC