Chenyu Zhu

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Education

Northwestern University — *Evanston, IL*
M.S. in Robotics — *Sept. 2025 – Dec. 2026*

University of California, Berkeley — *Berkeley, CA*
Exchange Program — *Jan. 2024 – Jun. 2024*

Southeast University — *Nanjing, China*
B.S. in Automation — *Sept. 2021 – Jun. 2025*

Skills

Programming Languages: Python, C, C++, Assembly Language(x86), MATLAB
Skills: ROS 2, Linux, Git, CAD, SLAM, Motion Capture, Parallel Computing, Path Planning, Simulink
Languages: English (Professional), Mandarin (Native), Japanese (Intermediate)

Project Experience

Autonomous Clothes-Folding Robot – LeHome Challenge *Feb. 2026 – Present*

- Built an automated dataset generation pipeline in IsaacSim/IsaacLab randomizing lighting, garment type, and object placement, enabling diverse manipulation training data at scale
- Trained and benchmarked ACT, VLA, and DP policies against each other, achieving a best simulation success rate of 69%

Human-in-the-Loop Compliant LiDAR Drone *Jan. 2026 – Mar. 2026*

- Developed a PX4-based quadrotor that estimates human-applied external forces via a Kalman filter and responds in real time, enabling intuitive physical human–drone interaction
- Implemented a potential-field obstacle avoidance controller using 2D LiDAR, allowing the drone to navigate safely while preserving intended motion direction

LiDAR-Based EKF SLAM from Scratch *Jan. 2026 – Mar. 2026*

- Implemented EKF SLAM from scratch fusing odometry with LiDAR range-bearing data to jointly estimate robot pose and landmark positions, deployed and validated on a physical TurtleBot3
- Built a landmark detection pipeline using point clustering, circle-fitting, and data association, providing reliable feature extraction for the SLAM backend

Vision-Guided Domino Placement with Franka Robot *Nov. 2025 – Dec. 2025*

- Integrated perception, motion planning, and contact-aware execution to detect and place dominoes autonomously on real hardware, demonstrating a full manipulation pipeline end-to-end

Work Experience

Robotics Research Intern – Intuitive Surgical *Shanghai China, Jun. 2024 – Aug. 2024*

- Conducted thermal performance experiments on ultrasonic scalpels across different coatings and materials, fitting cooling data into analytical curves to quantify heat dissipation behavior
- Prepared daily setups, operated the da Vinci robot, and maintained structured data logs across 600+ tests, ensuring experimental consistency and reproducibility

Platform Engineer Intern – GE Healthcare *Wuxi China, Jun. 2023 – Aug. 2023*

- Designed, coded, and controlled a competition robot from scratch under two weeks, achieving 3rd place among 10 teams

Patent

Saccule folding mechanism, CN 220988900 U: A structure to fold a balloon after inflation for medical treatment in blood vessels, enabling smooth balloon extraction. Filed: 2024.05.24.
URL: https://patents.google.com/patent/CN220988900U/en