

KYLE THOMPSON

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EDUCATION

Northwestern University

Expected Dec 2026

Master of Science in Robotics

University of Illinois at Urbana-Champaign

Aug 2020 - Dec 2024

Bachelor of Science in Computer Science

TECHNICAL SKILLS

Software Development: C, C++, Python, Java, MATLAB/Simulink, Bash, Git, Linux, Docker, Unit Testing

Robotics: ROS/ROS 2, Pytorch, OpenCV, YOLO, CLIP, Path Planning, Kinematics, Gazebo, MoveIt2, SLAM

Mechanical: NX, Solidworks, 3D-printing, PCB design, Arena/PLM ECO, Rapid Prototyping

WORK EXPERIENCE

Willow

Mountain View, CA

Engineering Intern

Apr 2025 – Aug 2025

- Prototyped multi-antenna Bluetooth Channel Sounding distance measurement embedded firmware with C
- Integrated Zephyr RTOS, UART communication protocols and multithread synchronization in proof-of-concept system
- Developed Python data analysis tool to compare vacuum performance across 2,000 pumps
- Characterized capacitance-based liquid level sensor performance across environmental conditions using DOE
- Performed DFU and System validation of embedded firmware on 150 Willow Sync pumps

Mechanical Engineering Intern

Jun 2024 – Aug 2024

- Performed reliability testing for design verification of Willow Go Rev 2 and second sourced components
- Applied NX and SLA printing to rapidly fabricate soft plastic prototypes in design sprint to product release
- Created test models and generated vacuum waveforms to improve prototype system efficiency by 20%

Ancora Heart

Santa Clara, CA

R&D Intern

Aug 2023 – Dec 2023

- Developed dFMEA and verification test documentation for design verification of 4 catheter designs
- Executed verification testing, fixture development and data analysis to support catheter performance evaluation
- Assembled, programmed C, and installed automated catheter braiding control system to reduce braiding time by 50%

PROJECT EXPERIENCE

Simultaneous Localization and Mapping (SLAM) from Scratch (ROS 2, C++)

Jan 2026 – Current

- Developing an Extended Kalman Filter SLAM pipeline library for use on a differential drive wheeled robot

Ball Catching Franka Arm (Python, ROS 2, YOLO)

Nov 2025 – Dec 2025

- Led team of 4 engineers using Git to develop motion planning ROS 2 package with MoveIt2 on Franka Emika Panda
- Trained YOLOv11 object detection model with 5000 image dataset to identify moving balls for trajectory prediction
- Conducted eye-in-hand camera calibration using RGB-D camera and ArUco markers for localization

Pen Grabbing Robot (Python, OpenCV)

Sep 2025

- Applied background subtraction and color thresholding with RGBD camera to identify pen centroid
- Utilized python to convert space frames and identify centroid in end-effector space to grab pen

Wrapping Tension Control (Python, Linux)

Aug 2024 – Dec 2024

- Designed Python-based Raspberry Pi embedded system with load cell interface for real-time tension measurement
- Controlled stepper motor actuation to regulate wrapping tension in thermal battery wrapping system