

# Austin Lin

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Open to Relocation

## TECHNICAL SKILLS

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**Languages:** Python, Java, C++

**Tools:** MATLAB/Simulink, ROS2/Gazebo, SciPy, ZeroMQ, TCP/IP, Siemens NX, Git

## EXPERIENCE

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### General Dynamics Electric Boat

*Systems Engineer*, New London CT

Sept 2024 - Present

- Saved 1200+ hours of rework by developing a MATLAB tool to allow engineers to quickly identify and prioritize high redesign risk areas on cableways. Application combines data from 3D models, data from finite element transient shock studies, and employs statistical methods and cost-constraint optimization.
- Led a small team of engineers to implement class-wide design changes to improve safety and reliability in accordance with DoW requirements.
- Identify construction bottlenecks by coordinating closely with other disciplines (Design, Work Planning, Trades) and by providing engineering assistance to maintain quality and schedule.

### L3Harris C5 Systems

*Systems Engineering Intern*, Camden, NJ

June 2023 – Aug 2023

- Demonstrated quality of product for the customer through performing System Operability Verification Tests for Marcom IVCS and Symphony. Completed CompTIA Network+ Training.
- Performed troubleshooting on various network/radio configurations with Linux-based hardware.

### UMD Spaces Systems Lab

*Undergrad Researcher*, College Park, MD

May 2022 – Aug 2022

- Delivered testing and modelling results to guide spacecraft design research with Benjamin Reed from Quantum Space and Dr. David Akin.
- Calculated and visualized workspace of a robotic arm to reach payloads for in-orbit servicing. Used Denavit-Hartenberg parameters to calculate forward kinematics.
- Designed and fabricated a 1/4-scale physical robotic arm prototype. Produced and executed test procedure to validate python model results for 24+ spacecraft configurations.

## PROJECTS

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### Robotics and Autonomous Systems

- Programmed robots to identify, grab, and hand off Legos to each other. Trained a computer vision model for object identification and odometry, and used ZeroMQ through TCP/IP for inter-robot communication.
- Implemented a maze solving algorithm into a robot, using LIDAR information and ROS2 for live localization and mapping.
- Developed hardware and software for a robot arm and controller. Programmed C++ firmware for an Arduino microprocessor to handle serial communication a computer that calculates and graphically displays arm kinematics.
- Developed C++ firmware for a TI-RSLK robot (MSP432), using register manipulation to configure timers, PWM, and hardware interrupts for a Finite State Machine line-follower.

### Battery Simulation and State of Charge Estimator

- Created an interactive model of a battery with Python/Shiny to explore how adding measurement noise and adjusting Leuenberger observer gain impacts state of charge estimator accuracy and convergence.

## EDUCATION

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**University of Maryland**, College Park, MD

Aug 2020 – Aug 2024

B.S. Mechanical Engineering, Minor in Robotics and Autonomous Systems

*Scholars Public Leadership Program*