Brandon Lin

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EDUCATION

Yale University, New Haven, CT   Expected Graduation: May 2026
B.S. in Mechanical Engineering   GPA: 3.86 / 4.00

WORK EXPERIENCE

Yale University, *Undergraduate Learning Assistant,* New Haven, CT   September 2025 — Present
- Supporting 40+ students in machine element design fundamentals including stress analysis, fatigue life calculations, FEA, and reliability engineering through weekly office hours and technical assignment review for MENG 3125

Raytheon, *Systems Engineering Intern*, Woburn, MA   May 2025 — August 2025
- Developed an automated Power BI dashboard with a SQL-to-VBA data pipeline to track thousands of component failures and inform leadership decisions on repair capability expansion and inventory planning
- Created a vectorized Monte Carlo simulation in MATLAB modeling operational failures of mission-critical parts over multi-year timeframes to calculate radar downtime probabilities and provide risk metrics for procurement decisions

Yale University, *Undergraduate Research Assistant at the Faboratory,* New Haven, CT   September 2024 — May 2025
- Developed a YOLO-based image recognition system in ROS and Python to enable autonomous gait transitions for a turtle-inspired robot through real-time terrain classification and coverage percentage calculations
- Created an automated image labeling pipeline to generate YOLO-compatible training datasets by segmenting and annotating terrain types from proprietary video frames

Festo, *Customer Solutions Engineering Intern*, Islandia, NY   May 2024 — August 2024
- Recreated CAD models, technical drawings, BOMs, and customer quotations for 500+ pneumatic assemblies using Creo Parametric and SAP to maintain customer ordering capabilities during a global catalog migration

Yale University, *Undergraduate Research Assistant at the Faboratory,* New Haven, CT   June 2023 — May 2024
- Designed an internal pneumatic actuator for an amphibious robot limb that reduced morphing energy by 99% and actuation pressure by 93% compared to previous designs as second author on a paper published at IEEE RoboSoft 2024
- Designed a modular 3D-printed robot shell using SolidWorks surface modeling to improve field serviceability
- Characterized actuator performance through Instron compression and three-point bending tests across multiple actuation states and processed data in MATLAB to generate figures for the published paper

EXTRACURRICULAR EXPERIENCE

Yale Bulldogs Racing (BDR), *Powertrain Lead*, New Haven, CT   September 2022 — Present
- Served as Co-President and Chief Mechanical Engineer of Yale's Formula SAE team during the 2024-2025 season, overseeing 6x membership growth and directing mechanical systems development for the BR25 all-electric race car
- Led the design, analysis, and manufacturing of the powertrain, pedal box, and steering subsystems from scratch
- Verified hand calculations for powertrain and pedal box designs using FEA simulations, analyzed steering loads and gear ratio optimization in MATLAB, and fabricated components via manual machining, waterjet, and MiG welding

Yale Solar Charging Project, *Team Member*, New Haven, CT   February 2023 — May 2024
- Fabricated a solar-powered charging station prototype with an aluminum umbrella frame and battery storage for campus deployment as part of a renewable energies team

SKILLS

- *CAD Software*: SolidWorks, Creo Parametric, Onshape, Autodesk Fusion 360
- *Programming & Data Analysis*: Python, MATLAB, ROS, VBA, JavaScript, Microsoft Excel, Power BI, Power Query
- *Manufacturing*: Manual Machining (Lathe, Mill), MiG Welding, CNC, Waterjet, 3D Printing, Soldering
- *Technical Software*: SAP, Adobe Illustrator, LaTeX
- *Languages:* Chinese (Conversational), French (Intermediate)
- *Instruments:* Drums, Piano

AWARDS & PUBLICATIONS

- J. Sun, B. Lin, L.A. Ramirez, E. Figueroa, R. Baines, B. Yang, E. Marroquin, and R. Kramer-Bottiglio, "Performance Enhancement of a Morphing Limb for an Amphibious Robotic Turtle," *Proceedings of the 2024 IEEE 7th International Conference on Soft Robotics (RoboSoft),* 2024.
- Regeneron Science Talent Search Scholar (2022)