Romeo Garcia Jr.

romeogarcia@stanford.edu ● linkedin.com/in/romeo-garcia-jr/ ● romeogarciajr.com

PROJECTS

Autonomous Crate Transport Robot 1/25-3/25

- Designed and built an autonomous, untethered mobile robot for competitive crate transport, integrating mechanical design, sensor-based navigation, and system reliability

CNC Manufacturing: Bottle Opener, Ice Press 3/24-5/24

- Designed and CNC-manufactured a functional Tron-inspired bottle opener on Fusion 360: Manufacture, Design, FEA
- Manufactured a functional aluminum ice press with organic surfaces using Fusion 360: Manufacture, Design, Form

SpaDL: Space-Themed Interactive Game 9/24-12/24

- Designed and built a self-contained, interactive space-themed game featuring real-time sensor inputs, actuator-driven feedback, and tactile-visual elements for an immersive user experience

Autonomous TurtleBot Exploration and Object Detection 9/24-12/24

- Developed a ROS2 node integrating A* path planning, frontier exploration, real-time mapping in RViz, and stop sign detection for autonomous navigation of a TurtleBot in a closed environment.

Stackable Shoe Storage 1/23-3/23

- Used generative design to create a single-print, lightweight (on an Ender 3) custom shoe storage

Automated Navigation Robot 1/24-3/24

- Designed, built, and programmed an Arduino-powered robot with ultrasonic sensors, achieving 90% task completion.

EXPERIENCE

Test Engineering Intern, ***Aeromutable Corporation*** - *San Diego, CA* 6/22-9/22

- Procured a power unit and designed a custom bracket that helped provide 100% reliable system power
- Designed a 100% store-bought air intake system for cost-effectiveness and easy replacement
- Built a real-time weather data program for immediate system adjustments to current conditions
- Meticulously adhered to document control protocols for 15+ critical materials, such as instruction manuals, design reviews, cost analyses, prototypes, and CAD drawings

6/23-9/23

- Conducted comprehensive weather data analysis and comparative assessments across a full-scale experiment, identifying trends to optimize system performance.
- Sourced 2 testing devices to accurately measure fuel consumption during on-road evaluations.

Course Assistant, ***ME 170A/B Mechanical Engineering Capstone Design*** - *Stanford, CA* 9/24-3/25

- Assisted students in designing and developing engineering systems to address real-world challenges.
- Guided students through industry-standard development processes, from requirements definition to implementation.
- Provided feedback on technical design, system integration, ethics, professional communication.

Research Intern, ***CHARM Lab*** - *Stanford, CA* 1/23-3/23

- Engineered an Arduino-based system for guiding human motion using directional vibrotactile cues
- Designed a personalized casing using CAD, completing 3 iterations to optimize usability and aesthetics, and documented electrical schematics for system assembly.

EDUCATION

Stanford University, Stanford, CA.

M.S. in Mechanical Engineering - Mechatronics, Robotics - GPA: 3.95 June 2025

B.S. in Mechanical Engineering - Product Realization - GPA: 3.73 June 2024

SKILLS

Design/Software:	Advanced SolidWorks and Fusion 360, FEA, COMSOL, Github, Arduino, MATLAB, RasPi, ROS
Fabrication:	Injection Molding, 3D Printing, CNC Machining, Laser Cutting, Lathe, Mill, Soldering
Soft Skills:	strong work ethic, effective communication, attention to detail, critical thinking
Languages:	Python, C, C++, Spanish, American Sign Language