Romeo Garcia Jr.

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

EDUCATION

Stanford University, Stanford, CA.

M.S. in Mechanical Engineering - Mechatronics, Automatic Controls - GPA: 3.95 — expected June 2025
B.S. in Mechanical Engineering - Product Realization - GPA: 3.73 — June 2024

PROJECTS

Banana Launcher — 1/23-3/23
- Built a mass-efficient, motor-powered slingshot-style launcher capable of producing 100N of force

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.

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

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 TurtleBot navigation in a closed environment.

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

EXPERIENCE

Team Manager (Senior Capstone Project), ***Renewell Energy*** - *Stanford, CA* — 9/23-3/24
- Designed and implemented a lubrication system using an atomizing nozzle, achieving approximately 75% penetration efficiency through optimized pressure settings and 7+ tests to validate system performance
- Applied FMEA, CAD design, and prototyping techniques while managing a $3,000 budget and coordinating efforts within the team to ensure project success

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 during tests
- 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.

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.

SKILLS

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