

Alecsander Garcia

Mechanical Engineer

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SUMMARY

A motivated and upcoming graduate in Mechanical Engineering with a solid foundation in mechanical design, thermal dynamics, and materials science. Proficient in CAD software such as SolidWorks and AutoCAD, with hands-on experience in 3D modeling, product development, and prototyping. Strong problem-solving skills, a collaborative mindset, and a passion for sustainable automotive technologies

EDUCATION

B.S. Mechanical Engineering

University of California, Irvine

📅 09/2023 - 09/2025

KEY ACHIEVEMENTS

Wave Converter Success

Boosted converter output to 5 volts during dry-test trials and lit an LED in wet-tests.

Pneumatic Vehicle Design

Engineered a pneumatic vehicle completing courses with 90-degree turns in under 2 minutes.

Effective Educator

Led educational activities impacting 30 children, enhancing their learning experience.

Gesture Arm Innovation

Created a gesture robot arm, enabling precise object manipulation for course tasks.

PROJECTS

Wave Energy Converter

Coastal Currents at UCI

📅 12/2024 - 05/2025 📍 Irvine, United States

- Designed and fabricated a novel wave energy converter in collaboration with a mechanical engineering team, converting ocean wave mechanical energy into electrical power via a rotating counterweight and generator
- Led the planning phase, translating sponsor and stakeholder needs (environmental, market) into comprehensive project requirements
- Utilized SolidWorks for precise component design and oversaw fabrication through laser-cutting wood and 3D printing
- Validated converter performance, achieving up to 5 volts in dry-test runs and demonstrating functionality by powering an LED indicator during wet-tests with simulated ocean waves

Autonomous Pneumatic Vehicle

FUSION at UCI

📅 02/2024 - 05/2024 📍 Irvine, United States

- Designed and fabricated an autonomous pneumatic vehicle chassis using CAD software, laser cutting, and 3D printing for a competitive robotics challenge
- Engineered and integrated custom electronics and complex pneumatic systems to achieve forward propulsion, precise 90-degree turns, and timed activation
- Applied rapid prototyping, refined mechanical systems, and leveraged collaborative engineering practices throughout the project lifecycle

PROJECTS

Mobile Gesture-Controlled Robotic Arm

FUSION at UCI

📅 01/2024 - 04/2024 📍 Irvine, United States

- Engineered a mobile gesture-controlled robotic arm as a core subsystem for a competition robot, enabling precise object manipulation for course navigation, obstacle avoidance, and target delivery tasks
- Designed and fabricated a robust claw mechanism and arm components using SolidWorks, leveraging advanced manufacturing techniques (3D printing, laser cutting) and applying expertise in CAD and rapid prototyping to deliver a functional and reliable robotic arm subsystem
- Collaborated with the hardware subteam to seamlessly integrate mechanical components with sensor and control systems, enabling responsive gesture-controlled operation

PROFESSIONAL EXPERIENCE

After-School Program Aide

Del Mar Union School District

📅 06/2023 📍 San Diego, United States

After-school Program

- Displayed leadership and teamwork by planning, supervising, and leading educational activities for 30 children
- Developed strong communication skills by liaising with parents and staff to meet the needs of over 50 children

LANGUAGES

English

Native



Spanish

Intermediate



SKILLS

3D Modeling

3D Printing

AutoCAD

Robotics

SolidWorks

2D CAD Drafting

Mechanical Design

Conceptualization

Requirements Gathering

Stakeholder Analysis

Collaboration

Teamwork