

Ario Medrano Lujan

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EDUCATION

New York University, Tandon School of Engineering

Bachelor of Science in Mechanical Engineering

Brooklyn, NY

Expected May 2029

Oceanside High School

High School Diploma, with Honors

Oceanside, New York

Graduated June 2025

SKILLS

Manufacturing: Equipment Organization, Power Tools, 3D Printing, Laser Cutting, Water Jet, CNC.

Technical: SolidWorks, Fusion 360, Ansys, Microsoft Office, Python, Java, MATLAB.

Interpersonal: Clear Communication, Teamwork, Leadership, Problem Solving, Organization.

PROJECTS & RESEARCH

NYU FSAE Motorsports

Oceanside, NY

Powertrain Co-lead & Aerodynamics Team Member

Jan. 2025 - Current

- Designing side pods to enclose the radiator and directing airflow through it to improve cooling.
- Developing new radiator mounts, with planned structural testing under estimated forces and moments at 40 mph to evaluate strength and stability.
- Tested the radiator's temperature sensor to determine the fan's operating temperatures.
- Manufactured 5+ race-car components, including a chain guard and mounts for the inverter, pump, radiator, and coolant overflow tank, using CAD and waterjet cutting.
- Designed a chain-tensioning push pin and completed training on ShopBot CNC operation.

Columbia Fusion Research Center

Oceanside, NY

Research Assistant

Jul. 2026 - Aug. 2026

- Assisted with precise 3D scanning and inspection of fusion reactor components to identify manufacturing defects and evaluate weld quality.
- Reviewed scientific papers on superconducting magnet failures to support development of a protection system aimed at preventing overheating and equipment damage.

EG-UY 1004 Introduction to Engineering and Design

MotionLink

Oct. 2025 – Dec. 2025

- Led the design, programming, fabrication, and assembly of a robotic car and motion-sensing glove within a \$100 project budget.
- Programmed 6+ sensors to translate hand and finger movements into driving commands, enabling one-handed control through gestures.
- Integrated radio-frequency communication between the glove and car, enabling wireless operation.

Speed Bump Energy Generator

Jun. 2025 – Aug. 2025

- Developed a prototype to generate electricity from vehicles passing over speed bumps.
- Integrated circuitry and programming to analyze energy output efficiency, using compression springs, a multimeter, a system of gears, and a bridge rectifier to transform alternating current (AC) to Direct current (DC).

EXPERIENCE

TJX Companies: Marshalls

Oceanside, NY

Sales Associate / Cashier

Jun. 2023 – Aug. 2024

- Delivered excellent customer service and ensured a positive experience for 100+ customers every day.
- Processed stock and monetary transactions accurately and efficiently.

Hughes Schools Volunteer (HSV)

Cochabamba, Bolivia

Volunteer Leader

Jan. 2021– Dec. 2023

- Raised over \$1,000 for school charity programs through fundraising initiatives.
- Trained 15+ new volunteers, improving overall team participation by 32%.