

Alvaro Lopez Guerra

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EDUCATION

Columbia University

Master of Science, Mechanical Engineering

September 2026 - December 2027

New York, NY

- **Coursework:** Advanced Manufacturing Processes, Mechatronics, Data Science for Mechanical Systems

New York University, Tandon School of Engineering

Bachelor of Science, Mechanical Engineering

September 2020 - June 2024

New York, NY

- **Coursework:** CAD and FEA (Solidworks and Ansys), Machine Design, Heat Transfer

PROFESSIONAL EXPERIENCE

EngiWorks

July 2026 - August 2026

Mechanical Engineer Intern

Caguas, PR

- Reverse-engineered production-line components for pharmaceutical manufacturing clients by combining precision caliper measurements with 3D scanning of complex surfaces to develop dimensionally accurate SolidWorks models.
- Designed weather-resistant sheet metal junction boxes in SolidWorks, integrating McMaster-Carr hardware and coordinating bend designs with the press brake operator to align with manufacturing capabilities.
- Conducted precision quality inspections on 500+ machined components to verify ± 0.002 " tolerances, supporting on-time delivery and compliance with strict quality standards.
- Diagnosed and repaired a Bambu Lab H2D 3D printer damaged in shipping, disassembling major subassemblies, repairing bent frame, and reassembling the unit to full working condition.

Structural Preservation Systems

August 2024 - April 2026

Project Engineer

New York, NY

- Managed onsite execution of two restoration projects, Second Atlantic Terminal (\$27M contract value, covering facade, MEP, and fire suppression) and Taino Towers (\$14M), ensuring field work complied with engineering drawings and project requirements.
- Maintained accurate monthly job-progress logs containing 50+ line items to prepare payment requisitions totaling more than \$3 million.
- Hosted biweekly project operations meetings for Project Managers and Project Engineers to go over project financials, progress, and important updates.

Collins Aerospace

June 2023 - August 2023

Project Engineer Intern

Aguadilla, PR

- Monitored the Supplier Request for Information (SRI) process and hosted weekly meetings to maintain alignment between engineers and suppliers on technical updates.
- Participated in Fracture Control Board reviews of critical mechanical components, evaluating defects against quality and reliability standards and supporting assessments with engineering calculations.

PROJECTS

Bike Bottle Holder

June 2024 - July 2024

Independent Project

- Created a parametric 5052 aluminum cargo cage in SolidWorks to mount on standard bicycle frame bosses, adding a strap mechanism to secure bottles and gear of varying sizes and shapes rather than cycling-specific bottles alone.
- Leveraged material properties to hold finished mass under 150 g; cut the profile on a CNC waterjet and formed it on a press brake.

Modular Conveyor Belt Lift

January 2024 - May 2024

New York University

- Applied design for manufacturing and assembly principles by reducing part complexity, selecting process-friendly materials and fasteners, and minimizing component count to streamline 3D printing and fabrication.
- Manufactured components in-house (3D printed pulleys, CNC-cut and press-brake-formed metal parts) and assembled the system with Arduino control; prototype lifted and moved the 20 lb target load.

TECHNICAL SKILLS

Solidworks (parametric modeling, sheet metal, assembly, drawings), ANSYS, 3D Printing, CNC WaterJet, CNC Router, Laser Cutting, Sheet Metal Forming, Python, Arduino, Excel, Microsoft Suite, FE Mechanical Engineering Exam Passed April 2025, Finite Element Analysis (FEA), Material Properties