

Mauro A. Pérez Colón

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EDUCATION

Columbia University

Expected May 2028

B.S. Mechanical Engineering 4-2 Engineering Student

Clark University

May 2026

Computer Science and Physics studies

Honors: Dean's List | NEWMAC All-Academic Team (2023–2025)

Relevant coursework: Fluid Mechanics, Thermodynamics, Electronics, Materials Science & Engineering,

Classical Mechanics, Artificial Intelligence

TECHNICAL SKILLS

Design and hardware: SOLIDWORKS, Arduino, Raspberry Pi, sensors, motor control, soldering, 3D printing

Programming and data: Python, C++, MATLAB, SQL, OCaml, Java, pandas, scikit-learn, Power BI, Excel

Systems: Linux, Slurm, Git, TCP/IP, multithreading | **Languages:** English and Spanish

ENGINEERING PROJECTS

Automated Water Transfer System

2025–2026

Capstone and Directed Study | Clark University | Arduino, C++, OCaml, Python

- Designed and built an Arduino UNO R4 WiFi prototype integrating two pumps, an H-bridge, ultrasonic sensing, and a Hall-effect flow meter for bidirectional transfer between two tanks.
- Implemented finite-state control and interrupt-based pulse counting to track transferred volume and stop the active pump when the user-specified target was reached.
- Added pump interlocks, transfer-volume limits, and command validation to prevent simultaneous pump operation and reject invalid or conflicting transfer requests.
- Developed an OCaml TCP/WiFi controller for transfer direction, target volume, status, measurement, and stop commands; documented firmware architecture and the command protocol.

Project: github.com/maucolon/Water

IoT Sensor Monitoring Pipeline | Clark University

Fall 2025

- Built a multithreaded Python service with synchronized queues and CSV logging to collect Arduino sensor readings and serve measurement summaries through an HTTP monitoring interface.

NEWMAC Match Predictor | Team Project

Fall 2023

- Developed decision-tree and random-forest models using 25 years of conference soccer data; wrote unit tests for the team's Python match predictor.

WORK EXPERIENCE

Data Engineer Intern | EVERTEC, Inc.

Jun 2025–Oct 2025

- Automated manual billing workflows for Risk Center and developed billing algorithms tailored to country-specific requirements and transaction use cases.
- Transferred and automated the entire billing data flow for the Risk Center team and Billing Department.

Systems Administration Assistant | Clark University

Aug 2023–Dec 2024

- Supported Linux HPC cluster operations using Slurm and Microway infrastructure; helped students and faculty submit research jobs and troubleshoot computing workloads.

Project Engineering Intern | Hilton Engineering

May 2024–Aug 2024

- Assisted with a hotel boiler installation, performed safety checks, and helped troubleshoot an installation failure to support project completion.
- Participated in boiler installation and maintenance site visits and helped develop technical solutions for field projects.

ACTIVITIES

Columbia Formula Racing | Powertrain Team Member

Columbia Men's Club Soccer | Puerto Rican Student Association at Columbia

Clark Mens's Soccer Varisty