Enmanuel Matos Reyes

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SUMMARY

Mechatronics student with hands-on experience in automation, CAD modeling, and sensor-based systems. Strong foundation in PLC programming, mechanical design, and cross-functional teamwork Seeking a 2025 summer-fall co-op focusing on Robotics and Automation.

EDUCATION

Bachelor of Science in Mechatronics **May '27**

Rochester Institute of Technology (RIT) | Rochester, NY **- GPA 3.07**

College of Engineering Technology Dean's List 2023-2024,2024-2025

Society of Hispanic Professional Engineers (SHPE), RIT Launch IREC, CETSAB

SKILLS

Robotics & Automation: RobotStudio, PLC Programming (Allen-Bradley/Siemens), Pneumatic & Hydraulic Systems, Sensor Integration, Actuator Control, PID & Motion Control

Embedded Systems: Arduino, Raspberry Pi, Code Composer Studio, Quartus, Embedded C/C++, Data Acquisition

AI & Data: Python (Automation, ML), LangGraph, Agent Systems, OpenCV, MATLAB (Modeling & Analysis), Statistical Tools, Excel Automation

Design & Simulation: SolidWorks, Autodesk Inventor, AutoCAD, MATLAB, Simulink, Multisim, RocketPy, OpenRocket

Programming: C/C++, Python, Java, MATLAB, SQL, ABB RAPID

Project Tools: Git/GitHub, System Integration, Technical Documentation, Agile Collaboration

PROJECTS & EXPERIENCE

RocketPy Simulation & Launch Analysis Tool — RIT Rocketry Club **Sep '25 - Present**

RIT | Rochester NY

- *Developed a Python-based RocketPy simulation app for rocket trajectory and aerodynamic*
- *modeling Automated input parameters and post-processing, cutting simulation setup time by 60%*
- *Validated results through OpenRocket comparisons, improving flight accuracy and thrust curve estimation*

***Skills Utilized**: Python, MATLAB, RocketPy, OpenRocket*

ABB Robot Pick-and-Place Automation — *RIT Robotics & Automation Lab* **Sep '25 - Present**

RIT | Rochester NY

- Programmed an ABB IRB robotic arm using RAPID language to perform automated pick-and-place operations
- Designed a RobotStudio simulation environment to model joint trajectories, gripper actuation, and conveyor coordination
- Integrated proximity sensors and PLC signals for object detection and synchronized motion control
- Optimized motion paths to reduce cycle time by 25%, improving efficiency and repeatability

Boat/Ship Engineer and Mechanic North — Summer Internship **Sep '25 - Oct '25**

River Shipyard | Rockland NY

- Assisted with diagnostics, repair, and maintenance of marine engines and hydraulic systems
- Performed hands-on troubleshooting, disassembly, and testing of propulsion systems and onboard electronics
- Collaborated with senior engineers on system calibration and testing for large vessels

***Skills Utilized**: Mechanical System Maintenance, troubleshooting, Collaboration*

Pneumatic Logic Lab — RIT Fluid Power Laboratory **Jan '25 - May '25**

RIT | Rochester NY

- *Constructed AND/OR valve-controlled pneumatic circuits to enable dual-operator actuation using Automation Studio*
  Optimized cylinder retraction/extension speed using flow regulators and quick exhaust valves
- *Documented control logic and truth tables in compliance with lab standards and automation theory*

***Skills Utilized**: Automation Studio, Pneumatics, Control Logic*

Allen-Bradley PLC Control System Design — RIT Mechatronics Project **Sep '24 - Dec '24**

RIT | Rochester NY

- *Designed and programmed an Allen-Bradley PLC for a fully automated multi-cylinder process using proximity sensors and solenoid valves.*
- *Implemented safety interlocks and sequential logic for system reliability and fault detection.*

***Skills Utilized**: RSLogix 5000, Ladder Logic, Automation Studio, Sensors & Actuators*