

Nicholas Rojas

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SUMMARY

Electrical Engineering student completing a Bachelor of Science at Rutgers University, with hands on academic work in **manufacturing automation**, process controls, operational technology, industrial data, and **digital manufacturing**. Built supervised prototypes using instrumentation, controller logic, PLC concepts, SCADA interfaces, HMIs, Python, SQL, Power BI, and Microsoft 365. Created control narratives, I O records, **configuration documentation**, test procedures, risk reviews, and operating guidance for laboratory projects. Analyzed historian style time series, investigated simulated control issues, verified data exchanges, and presented findings to faculty and project stakeholders. Coursework and projects developed practical familiarity with equipment integration, industrial networking, commissioning, validation, GMP fundamentals, **OT IT connectivity**, and structured change practices. Ready to contribute careful analysis, clear documentation, and collaborative problem solving within a regulated manufacturing environment.

EDUCATION

Bachelor's Degree in Electrical Engineering
Rutgers University GPA: 3.5
Coursework: Automation, Process Controls, Industrial Networking, Data Analytics, Instrumentation

2026
New Brunswick, NJ

TECHNICAL SKILLS

- **Automation Systems:** Delta V, PLCs, SCADA, HMIs
- **Process Control:** Controller logic, instrumentation, control behavior
- **Industrial Data:** OSI Pi, historian data, time series
- **Data Analytics:** Python, SQL, Power BI
- **Microsoft 365:** Excel, Word, PowerPoint, Teams, Outlook
- **Industrial Networking:** OT networks, data exchange, network settings
- **Equipment Integration:** Automation design reviews, technical assessments, I O records
- **Testing and Commissioning:** Test protocols, functional testing, commissioning checks
- **Validation and Quality:** Qualification, validation, GMP requirements
- **Risk and Change:** Risk assessments, change controls, corrective actions
- **Digital Manufacturing:** Industry 4.0, connected production, digital transformation
- **Documentation:** Operating procedures, configuration records, status updates

SKILLS

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|------------------------|-----------------------------|-----------------------|------------------------|
| • Analytical thinking | • Cross functional teamwork | • Controls | • Programming concepts |
| • Problem solving | • Independent work | • Robotics | • Data analytics |
| • Technical writing | • Organization | • Instrumentation | • Project management |
| • Verbal communication | • Automation | • Process engineering | |

EXPERIENCE

Automation and Process Control Project Engineer
Capstone Project
Led a supervised capstone focused on bench scale process control, instrumentation, controller logic, HMI behavior, structured testing, risk review, and technical presentation. Maintained project records while connecting control decisions with reliable operation and clear stakeholder review.

- Designed a bench scale control prototype using **instrumentation** and **HMI** logic for flow regulation.
- Created control narratives, I O records, configuration documents, and test procedures for implementation review.
- Executed **commissioning** checks and functional tests, recording deviations and corrective actions before demonstration.
- Analyzed time series process data with **Python** and **Excel**, supporting documented tuning recommendations.
- Reviewed sensor, communication, and control failure modes, adding safeguards and recovery steps to procedures.
- Presented architecture, test results, limitations, and integration recommendations to faculty reviewers.

January 2026 - September 2026
New Brunswick, NJ

Industrial Automation Lab Researcher
Student Lab
Supported supervised laboratory exercises involving PLC logic, HMI configuration, SCADA style **monitoring**, **industrial networking**, equipment states, and controlled configuration changes. Practiced disciplined troubleshooting and technical reporting for simulated manufacturing operations.

- Configured PLC and HMI exercises, translating equipment sequences into testable control logic under supervision.

September 2025 - December 2025
New Brunswick, NJ

- Monitored simulated process conditions through **SCADA** interfaces, using alarm histories to isolate issues.
- Documented controller tags, network settings, equipment states, and **troubleshooting** observations in lab records.
- Connected training devices on an isolated industrial network and verified control data exchange.
- Executed verification steps after configuration changes, comparing actual behavior with expected results.
- Delivered **Word** and **PowerPoint** summaries covering defects, corrective steps, and reliable automation operations.

Industrial Data Analytics Assistant

January 2025 - May 2025

University Research Lab

New Brunswick, NJ

Supported a faculty led digital manufacturing study through SQL data preparation, Python validation, Power BI reporting, historian style analysis, and OT to analytics flow documentation. Connected data quality work with maintenance awareness and operational visibility.

- Built a **SQL** dataset from simulated equipment records for production state analysis.
- Developed **Power BI dashboards** showing equipment status, cycle information, and selected process indicators.
- Wrote Python scripts to clean and validate historian style time series data.
- Compared dashboard results with source records, documenting data **quality** exceptions for review.
- Mapped an OT to **analytics** data flow, documenting interfaces, refresh steps, and assumptions.
- Presented findings linking operational visibility with maintenance awareness and **Industry 4.0** experimentation.

PROJECTS

Digital Manufacturing Visibility Study 📅 2025

Created a supervised analytics study using SQL, Python, Power BI, and historian style records. The work connected equipment status data with reporting, data quality review, and practical manufacturing visibility.

Bench Scale Process Control Prototype 📅 2026

Developed a supervised control prototype with instrumentation, controller logic, HMI behavior, test procedures, and risk review. Results supported commissioning practice, documented tuning, and clear technical presentation.

LEADERSHIP & AWARDS

- Dean's List, Rutgers University, 2025
- Engineering Capstone Showcase Recognition, Rutgers University, 2026
- Project Coordinator, Student Automation Study Group, 2025 to 2026

CERTIFICATIONS

- Microsoft Learn Power BI Learning Path 📅 2026
- Coursera Industrial IoT on Google Cloud 📅 2026

PROFESSIONAL AFFILIATIONS

- Student Automation Study Group, Project Coordinator, 2025 to 2026
- Peer Tutor, Introductory Circuits and Programming, 2025 to 2026

LANGUAGES

- English (Native)
- Spanish (Proficient)

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST