

Carla Lopez

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EDUCATION

Rochester Institute of Technology

Rochester, NY

B.S in Software Engineering (GPA 3.5)

May 2027

TECHNICAL SKILLS

Languages: Python, Java, SQL (Oracle, PostgreSQL), JavaScript, C, C++, HTML/CSS, Cypher

Technologies/Skills: OCI, AWS, Spring Boot, Docker, React, Flask, Git, Neo4j, Data Warehousing, ETL Pipelines

EXPERIENCE

Research Assistant

May 2026 – August 2026

Graph-Oriented Applications Lab (GOAL Lab)

Rochester, NY

- Engineered a high-performance Python ETL pipeline to ingest and normalize 200k+ software vulnerability records from Google's open-source OSV database and 72+ million package information from PyPI ecosystem into a MySQL adjacency list, resolving complex PEP-compliant specifiers in-flight.
- Architected a Knowledge Graph by transferring relational records from MySQL to a Java embedded Neo4j database, enabling real-time analysis and transitive security risk tracking across the PyPI ecosystem.

Data Engineer Co-Op

June 2025 – December 2025

Oracle

Remote

- Designed and built an end-to-end ETL data pipeline using Python and SQL to ingest, transform, and load large-scale datasets from OCI Object Storage into Oracle Data Warehouse for analytics and reporting
- Built automated data generation and validation Python tools producing 5M+ records to support analytics testing, data accuracy verification, and pipeline scalability.
- Led a proof-of-concept evaluation of an ETL tool, assessing advantages and trade-offs related to data modeling support, data schema evolution, and integration with existing cloud data infrastructure.

Software Engineer Co-Op

June 2024 – December 2024

Vicor Corporation

Boston, MA

- Designed and built Spring Boot services to extract, cleanse, and transform 30+ critical data objects from an Oracle distributed database to support enterprise analytics and SAP reporting systems.
- Optimized and re-engineered 50+ SQL workflows processing over 15M records, improving pipeline execution performance by 30% while ensuring data quality and consistency during large-scale ERP migration.

Lead Software Engineer

December 2022 – Present

Accessible Learning Labs (all.rit.edu)

Rochester, NY

- Engineered and maintained scalable React-based web applications, contributing to an open-source project funded by the NSF aimed at advancing AI/ML education and supporting 40+ higher education schools in the US.
- Exhibited ownership by leading a team of 3 to successfully deliver outreach events, sparking interest in computer science and cybersecurity among 100+ students from K-12 and undergraduate institutions.

Backend Software Engineer Intern

May 2023 – September 2023

MS4M

Lima, Peru

- Designed and deployed scalable Spring Boot RESTful APIs, implementing backend business logic with Dijkstra's algorithm to compute optimal mineral transport paths, reducing path computation time by 30% in a cloud-based fleet management system.
- Enhanced software quality and reliability by designing and implementing robust unit and integration tests with JUnit and Mockito, achieving an exceptional 90% code coverage within Azure DevOps pipelines for improved CI/CD workflows.

PROJECTS

Peru 2026 Election Dashboard (informate.pe) | *Next.js, Flask, Python (NLTK / Hugging Face, PyTorch), Vercel*

- Built a national-scale analytics platform tracking 39 Peruvian election candidates by processing daily news articles and social media posts to assess public sentiment and media trends.
- Implemented automated data pipelines and interactive visualizations using Next.js and Flask to deliver insights on candidate perception, sentiment evolution, and media coverage.

LLM-Based Knowledge Graph Analysis Tool | *Python, Ollama, LLMs, RAG*

- Collaborated with a faculty advisor as a research assistant to design and develop a Python-based tool leveraging locally hosted large language models via Ollama to analyze relationships between knowledge graphs