

Rahul Chimata

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EDUCATION

University of Minnesota - Twin Cities

Master's in Robotics

Bachelor of Science in Computer Science & Computer Engineering

Minneapolis, MN

May. 2026 – Dec 2027

Aug. 2023 – May 2027

EXPERIENCE

Software Developer Intern

May 2026 – Aug. 2026

IBM - International Business Machines

Lowell, MA

- Architected and developed **InfraHub**, a production-grade enterprise knowledge retrieval system using a **Watsonx-powered RAG pipeline** that ingests content from **Backstage, Confluence, GitHub, and W3**, combines **BM25 and vector search** with intent-aware ranking and trust scoring, and helps HashiCorp engineers quickly find infrastructure documentation, organizational decisions, ownership information, and relevant code.
- Developed an **MCP-based repository relationship tracker** integrating **graph and vector databases** with **IBM's internal CLI** to map upstream and downstream dependencies across HashiCorp GitHub repositories, giving engineers and AI coding agents broader codebase context and reducing time spent tracing dependencies and understanding cross-repository impacts.

Software Developer & SCADA/P&C Engineering Intern

May 2024 – Sep. 2025

Mortenson Engineering Services

Golden Valley, MN

- Developed a full stack **-Python, React, and FastAPI-** application that expedites work by **15%** for Protection and Control engineers. It is designed to analyze electrical substation design schematics by using **RAG, Deep Learning** image models, **YOLO** vision libraries, **Agentic AI** processes, **Pandas**, and **REST APIs**, the software scrapes hundreds of schematics to pull data, to then import into AUTOCAD.

Undergraduate Research Assistant - Machine Learning

Nov. 2025 – Present

University of Minnesota – Minnesota Interactive Robotics and Vision Laboratory

Minneapolis, MN

- Generating **synthetic datasets** using a pipeline that utilizes **Blender, Diffusion Models, LLM's**, and **YOLOv11**, for underwater trash to help improve vision model accuracy for underwater robots.

University of Minnesota – Natural Language Processing

Minneapolis, MN

- Investigating **dataset sparsity and agreement scaling laws** and exploring **NLP models** that predict individual annotator responses to text tasks (e.g., sentiment, offensiveness).

PROJECTS

EyeDA Project Co-Founder

| Python, CAD

- Designed a **Python**-based facial-recognition prototype with **CV2** and **Mediapipe** to detect driver distraction. Fostered project development by managing interns, and collaborated with and gained recognition from industry, news, and community organizations.

Solar Tracking System

| C, Assembly, APIs, Embedded Systems, Microcontrollers, Circuit Design

- Developed an embedded **C** and **Assembly API**, using the **Inter-Integrated Circuit** communication protocol to extract data from the **Analog-to-Digital Converter** from external hardware, to automate solar panel movement.

ACTIVITIES & HONORS

- CSE Mentor** (2025 - 2026): Mentored first-year undergraduate students at the college of science and engineering.
- FIRST Robotics Engineering Lead** (2011 – 2023): Led CAD, fabrication, and programming efforts; competed at World Championships as driver and engineering lead.

TECHNICAL SKILLS

Languages: Java, Python, C/C++, x86-64 Assembly, OCaml, SQL, JavaScript, HTML, CSS

Frameworks: React, Node.js, Flask, FastAPI, Terraform

Developer Tools: Git, Docker, VS Code, AWS, Azure, Google Cloud Platform, Verilog, Vivado