

Saitej Velaga

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Education

University of Michigan

Expected May 2027

Bachelor of Science in Engineering in Computer Science (GPA: 3.84) – University Honors

Ann Arbor, MI

- **Relevant Coursework:** Computer Networks, Data Structures and Algorithms (C++), Web Systems (Flask/React/SQL), Machine Learning, Computer Organization (C/ASM)

Experience

Software Engineer Intern

May 2025 – August 2025

KLA

Ann Arbor, MI

- Built a production-grade agentic AI system enabling natural-language workflow automation, achieving 90% faster internal processes, lowering technical barriers, and facilitating intuitive tool learning and adoption across teams
- Architected and implemented a scalable, decoupled client-server framework using Model Context Protocol (MCP) and JSON-RPC, delivering robust agent communication and orchestration
- Integrated multi-LLM providers (LLaMA, Azure OpenAI, Gemma) with RAG + ChromaDB + Agno, delivering a flexible full-stack AI platform using Python, Flask, asyncio, Docker, and web technologies
- Collaborated in a two-person Agile team, iterating rapidly and delivering biweekly stakeholder demos; core contributions were extended into by a full-time engineer post-internship

Research Assistant - Software Engineer

September 2024 – Present

University of Michigan

Ann Arbor, MI

- Developed a neural network to predict building performance metrics from indoor environmental sensor data, achieving over 95% accuracy, enabling predictive control in passive building systems
- Cut system costs by 30% by redesigning the device network with a SoftAP architecture and MQTT
- Developed a responsive, mobile-accessible monitoring website using HTML, CSS, and JavaScript, enabling users to view real-time environmental data and ventilation status for automated building control
- Automated final deployment of a predictive control system, cutting total startup time by 50%

Computer Vision Object Detection Lead

January 2023 – Present

MFLY (Student Club)

Ann Arbor, MI

- Developed with a three-member team an aerial object detection system using OpenCV and YOLO machine vision algorithm in Python, optimizing real-time object detection from aerial view
- Collaborating within a larger computer vision team, integrated and tested a human detection system
- Utilizing an Nvidia Jetson to achieve an 80% accuracy while being used on a plane at over 200 ft

Software Engineer Intern

June 2023 – Aug 2023

DT4o

Farmington Hills, MI

- Captured and labeled CV datasets with CVAT; established MQTT messaging and RTSP video streaming from IoT sensors for reliable real-time ingestion
- Collaborated with interns and full-time engineers to develop and support a technology demo showcased at an expo

Projects

Search Engine | Python, Flask, AWS EC2, HTML, CSS, JavaScript

- Engineered a scalable search engine using a distributed MapReduce pipeline to build a segmented inverted index, enabling fast, large-scale retrieval with tf-idf and PageRank-based ranking algorithms
- Developed a RESTful Index Server and a multi-threaded Search Server with Flask to support concurrent query aggregation across distributed shards and designed a dynamic full-stack frontend with HTML, CSS, and JavaScript for real-time PageRank weighting adjustments
- Deployed system on AWS EC2 instances with automated start, stop, and restart scripts

Technical Skills

Languages: Python, C++, C, HTML, CSS, JavaScript

Technologies: Git, SQL, Bash, TensorFlow, Flask, YOLO, Docker, Pandas, Scikit-learn, OpenCV, Postman, WSL, Linux

Bootcamps: The Complete Web Development Bootcamp (Udemy), The Complete SQL Bootcamp (Udemy)