

Alex Gundrum

ajgundrum@crimson.ua.edu | (608) 616-2449 | alexgundrum.com | linkedin.com/in/alex-gundrum | github.com/AlexGundrum

EDUCATION

The University of Alabama

May 2027

Master of Science in Computer Science

Tuscaloosa, AL

Bachelor of Science in Computer Science — GPA: 4.00/4.00

May 2026

- Relevant Courses: Data Structures and Algorithms, Operating Systems, Database Management Systems, Web Development.

EXPERIENCE

Phifer Inc.

Aug. 2025 – Present

Software Engineer Intern

Tuscaloosa, AL

- Fine-tuned a local Gemma model via **Unsloth** for supervised fine-tuning, deployment with **Ollama** and **OpenWebUI**.

AMEWAS, Inc.

Jun. 2025 – Aug. 2025

Software Engineer Intern

Patuxent River, MD

- Architected a C++ translation layer to standardize data inputs, ending integration conflicts between system modules.
- Automated configuration file aggregation with Bash scripting, cutting 15 minutes of manual effort per deployment.
- Guaranteed production reliability of the C++ engine by authoring a comprehensive test suite with Google Test (GTest).
- Maintained an **Active Interim Secret Security Clearance**, ensuring strict adherence to classified project protocols.

Digital Forensics and Control Systems Security Lab

Aug. 2023 – May 2025

Undergraduate Researcher

Tuscaloosa, AL

- Implemented a real-time speed estimation system in Python using OpenCV and YOLOv8, achieving **94.3%** accuracy.
- Projected 2D detections into 3D bounding boxes by leveraging scene vanishing points, boosting spatial accuracy by 28%.
- Constructed a system to detect inhibited vehicles, facilitating free-flow speed analysis for accurate traffic metrics.
- Formulated geometric transformations mapping vehicles to real-world coordinates for precise spatial data.

PROJECTS

Money Trees | *Python, Flask, OpenAI API, SQLite, React, Next.js, Chart.js*

- **Won 1st Place** FinTech award at UAIInnovate Hackathon for an AI-powered personal finance dashboard.
- Engineered Flask RESTful APIs and a SQLite database to manage financial data securely.
- Created a custom prompt system with the OpenAI API to deliver personalized financial advice.
- Built an intuitive frontend with React and Next.js, featuring dynamic visualizations using Chart.js.

Handwritten Digit Classifier | *Python, TensorFlow, NumPy*

- Built a neural network with TensorFlow and Python, achieving **95% accuracy** on the MNIST dataset.
- Implemented mini-batch gradient descent and custom neural network layers for scalable training.

Mancala Engine | *C++*

- Developed a C++ Mancala engine and implemented a competitive AI using the Minimax algorithm with alpha-beta pruning.

3D Rubik's Cube Simulator | *Java, Processing, PeasyCam*

- Built an **interactive** 3D Rubik's Cube simulator in Java with real-time performance at up to **144 FPS**.
- Applied OOP principles to model cube structure, ensuring modularity and scalability.

TECHNICAL SKILLS

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

Frameworks: Node.js, Next.js, React.js, Flask

Libraries: OpenCV, NumPy, YOLO, TensorFlow, TailwindCSS, SQLite, OpenAI API

Concepts: Debugging, Version Control, Object Oriented Programming, Relational Databases, LLM Prompting

Developer Tools: Git, Linux, VS Code, Firebase, Docker, CMake, Bash, Jira