Sandith Ganhewage

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EDUCATION

Duke University, *Electrical & Computer Engineering and Computer Science*   Expected Graduation: May 2027
- GPA: 4.00/4.00
- Dean's List with Distinction (Fall 2024 and Spring 2025), J. Welch Harriss Scholar
- Relevant Coursework: Engineering Design & Communication, Data Structures & Algorithms, Computer Architecture, Linear Algebra, Fundamentals of Electrical & Computer Engineering

Guilford College, *Dual Enrollment*   Aug. 2022 - May 2024
- GPA: 4.00/4.00
- Dean's List with Distinction (Fall 2022, Spring 2023, Fall 2023, Spring 2024)
- Relevant Coursework: Scientific Computing, Intro to Data Science, Elementary Statistics, Intro to Computer Programming, Advanced Computer Programming, Differential Equations, Classical & Modern Physics I, II, and III

WORK/RESEARCH EXPERIENCE

Qorvo Inc., Greensboro, NC   May 2025 — Aug. 2025
Embedded Systems Engineering Intern
- Designed an embedded systems solution to chip sorting with the Synax S9 Handler, communicating with the General Purpose Interface Bus (IEEE-488) Protocol, reducing testing configuration time by 30%.
- Deployed a company-wide solution to be used by 50+ employees in multiple testing labs across the country by coding a user interface with React and Node.js, freeing the default, expensive tester for other uses and increasing overall testing efficiency.
- Implemented low-level Arduino-based GPIB interface, using C++ to decode and emulate commands between the defaulter tester and handler, controlled by a Python script run on Raspberry Pi to emulate the tester at 5% of the cost.

Duke Computational Evolutionary Intelligence Lab, Durham, NC   Jan. 2025 — Present
Undergraduate Researcher
- Tested and researched machine learning model quantization and distillation techniques to reduce model size by up to 30% and inference latency by up to 10% while maintaining model accuracy using PyTorch libraries.
- Researched genome-sequencing-focused applications in 5 established bioinformatics algorithms for increased efficiency through hardware acceleration by tri-state CAMs (content addressable memory).

PROJECTS

SmartStudy (view here) (github)   *React, Node.js, MongoDB, Vercel, Tailwind CSS, Axios, FastAPI*
- Built full-stack web application allowing users to upload materials and generate 5+ types of study content with React/Node.
- Integrated MongoDB and bcryptjs for secure user authentication and file storage to organize, preserve, and edit study materials.
- Developed python-based backend for content generation, running generation LLMs and uploading documents to database, reducing model size by 30% with cost-efficient prompt engineering and chunking.
- Implemented Vercel for app hosting, securely exposing public features while protecting sensitive server-side information.

Home Lab   *Debian, SSH, Tailscale, Docker, CasaOS*
- Designed fully functional home server for 20% of the cost of commercial products utilizing headless Debian Linux system.
- Configured remote access to the server with Tailscale VPN, allowing for access to network-attached storage and access to other devices on the network, also establishing a secure exit node for secure browsing on unprotected public networks.
- Implemented user-friendly web UI, allowing for account-based access to various web applications hosted by docker containers.

Football Statistics Analyzer (view here)   *Java, JavaFX, Maven, JSoup, SceneBuilder*
- Developed application gathering 20+ years of NFL statistics for individual players through JSoup webscraping libraries.
- Built GUI based on JavaFX, utilizing SceneBuilder to efficiently design various application pages with interactive components.
- Improved overall application speed by 30% with caching system to save recently accessed statistics and images.

EXTRACURRICULARS

Duke Applied Machine Learning, Durham, NC   Sep. 2024 — Present
- Designing Robotic Arm controlled by Arduino and Servos, to be integrated with machine learning through serial communication.

Duke Catalyst, Durham, NC   Jan. 2025 — Present
- Active member of Duke's premier pre-professional tech society, engaging in workshops, networking events, and hackathon projects.

SKILLS

Programming Languages: Java, Python, Javascript/Typescript, C, C++, HTML/CSS, MIPS
Technologies: React/Next.js, Tailwind, Node.js, Docker, MongoDB, Firebase, Tailscale, Axios, Vercel, AWS, Selenium
Skills: Data Structures & Algorithms, Git/Github, Machine Learning, Embedded Systems, System Design