

SHEMAIAH MBETWA

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EDUCATION

B.Sc., Electrical Engineering (Concentration: Computer Engineering)

Alabama A&M University | Huntsville, AL

Jan 2021 - Dec 2024

GPA: 3.92/4.00

Honors: Employee of the semester (Fall 2023), Apple New Silicon Initiative Scholar, IEEE: Outstanding Student(2024), SoutheastCon Ethics Competition 1st Prize (2023), Gwendolyn Brooks Poetry Contest 1st Prize (2022), STEM Day Poster 2nd Prize(2021)

Coursework: Computer Architecture, Linear Circuit Analysis II, Analog and Digital Circuit Design II, Data Structures and Algorithms, Operating Systems, Microprocessors, VLSI Design and Test Tape Out and Bring Up, Simulation Techniques Lab

SKILLS AND SOFTWARE PROFICIENCIES

Technical Languages: C++, C, Python, SQL, sqlite3, VHDL, FPGA Programming, Assembly

Tools: Multism, Visual Studio, Vivado, Google Colab, Git, Siemens EDA Tools (S-Edit, L-Edit), WinDbg

WORK EXPERIENCE

Software Engineering Intern

May 2024 - Present

Microsoft Corporation | Redmond, WA

- Developed file IO error detection mechanisms in C++ and SQL to support performance tuning and debugging in the Performance Investigator for Xbox (PIX) tool.
- Extended PIX functionality with the addition of rules, enabling support for future game developer customizations within the tool.
- Developed unit tests to ensure proper functioning of extension rules and improve overall software reliability.

Software Engineering Intern

May 2023 - Aug 2023

Microsoft Corporation | Redmond, WA

- Developed features in C, and Debugger Markup Language (DML) for a debugger extension on the Xbox Devkit using console architecture and TCP/UDP protocols in command line tools.
- Enhanced game developers' experience on the Xbox Devkit by providing diagnostic information from crash dumps in WinDbg.
- Ramped up in MS Windows engineering source base and tools to help diagnose problems on high-speed network.

Tutor & Writing Consultant

Aug 2021 – Present

Tutorial Assistance Network, AAMU Writing Center | Huntsville, AL

- Tutored an average of 4 students per week in engineering, programming, and writing courses, supported them in developing good study habits, and creating course tailored resources; awarded Employee of the Semester for Fall 2023.

Explorer Intern (Product Management + Software Engineering)

May 2022 - Aug 2022

Microsoft Corporation | Redmond, WA

- Upgraded the usability on a confidential, internal web tool, using React and Typescript, used across the global Xbox team and by various business and engineering stakeholders.
- Collaborated with designers, senior developers, and intern team using agile methodologies.
- Scoped a new gaming project and worked with business and legal teams to ensure that the project met company and customer requirements.

PROJECTS

VLSI Design and Test Tape-out

Jan 2024 – May 2024

- Implemented simulations and optimizations for a two-stage operational amplifier in Siemens Tooling for a 180nm chip design, focusing on layouts, schematics, testbenches, and simulations as part of a tape-out class sponsored by Apple.
- Analyzed MOSFET DC and AC characteristics and executed Design Rule Checking (DRC) to ensure layout accuracy.

IEEE Southeast Conference, Ethics & Hardware Competition

Mar 2023 & Aug – Mar 2024

- Ethically hacked ChatGPT and gave recommendations for Organization for Economic Cooperation and Development (OECD) AI policy and the Institute for Electrical and Electronics Engineers (IEEE) Code of Ethics, placing 1st in IEEE Region III 2023 Conference.
- Organized and managed team participation in the 2024 IEEE SoutheastCon, including building of robot for 2024 Hardware Competition.

ACTIVITIES & HONORS

IEEE Chapter President | Google Developers Student Club Lead | Secretary, International Students Association | Thurgood Marshall College Fund Scholar | AAMU Honors Program Historian Committee | Career Development Services Campus Ambassador | Peer Researcher & Mentoring Experience Lead, HBCU First | Team Captain, Zambia Robotics (FIRST Global Robotics)