AMIYAH STEPHENS

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SUMMARY

Detail-oriented Computer Engineering student with hands-on experience in C/C++, Python, and VHDL. Solid foundation in digital logic, microprocessor design, and embedded systems, with practical experience from academic labs and personal projects. Demonstrated ability to deliver real-world solutions across networked systems, data visualization, and embedded design. Eager to contribute technical expertise and leadership skills to a dynamic computer engineering environment.

TECHNICAL SKILLS

Programming Languages: C++, C, Python, Java, MATLAB, Machine Learning, Assembly, VHDL

Hardware & Embedded Systems: Microcontrollers, Digital Design, Arduino, Raspberry Pi, Circuitry

Software & Tools: AutoCAD, Microsoft Office, Basic Networking (TCP/IP), Quartus, Git, Wireshark

WORK EXPERIENCE

Technik Kids | *Upper Marlboro, MD* **May 2025 – Current**

Technology & Engineering Intern

- Designed and developed an original curriculum introducing 50+ elementary-aged students to coding and basic circuitry, integrating interactive lessons and hands-on activities.
- Integrated a machine learning model into a web application using JavaScript to provide real-time predictions through a user-friendly browser interface.
- Designed and deployed a real-time IoT monitoring dashboard that transformed raw sensor data into actionable insights for remote diagnostics. Learned Node.js, WebSockets, and NoSQL technologies to aid in the delivery of a scalable, Wi-Fi-enabled solution aligned with performance optimization and data visibility goals.

PROJECTS

Embedded Overflow Alert System | *C++, Microcontroller, Embedded Systems, Circuit Design* **January 2025**

- Developed an embedded alarm system in C++ to monitor system states and detect overflow conditions in real time.
- Programmed LED indicators to provide immediate visual feedback using custom flashing patterns based on system status.
- Designed and constructed custom circuitry to manage input/output signals efficiently, ensuring accurate detection and low-latency response.
- Integrated microcontroller-based logic with hardware components to create a reliable real-time alert system for potential system breaches or data overflows.

Traffic Light Control System Simulation | *C++, MATLAB, Digital Logic Design* **December 2024**

- Engineered a traffic light control system by applying Boolean algebra and circuit logic principles to simulate real-world signal operations.
- Programmed a functional prototype in C++ that reflected accurate timing cycles and state transitions, reinforcing embedded systems concepts.
- Modeled and validated logic sequences in MATLAB, ensuring system accuracy before hardware-level implementation.
- Collaborated with a peer to divide system components and co-present the project's logic and performance, demonstrating effective teamwork and technical communication skills.

Advanced Embedded Calculator | *C++, HiFive 1 Microcontroller, Embedded Systems* **November 2024**

- Designed and developed an advanced virtual calculator using C++ on the HiFive 1 microcontroller, interfacing with a breadboard for hardware control.
- Engineered the implementation of floating-point arithmetic, supporting negative values, exponentials, and a wide range of complex mathematical functions.
- Applied embedded system programming techniques to optimize calculation performance, ensuring real-time responsiveness and accuracy.
- Integrated hardware/software components by configuring the microcontroller's GPIO pins and using low-level communication protocols to interface with external components.

Microprogrammed CPU Design | *VHDL, Quartus, Digital Systems Architecture* **May 2025**

- Designed and implemented a fully functional microprogrammed CPU using VHDL in Quartus, integrating a microsequencer, uROM, ALU, and multiple registers.
- Programmed custom 24-bit microinstructions in uROM to support operations like LOADI, LOAD, MOVE, STORE, XOR, and conditional branching.
- Connected PC, MAR, MDR, SP, IR, R0, and R1 with control signals, MUX logic, and seven-segment displays for real-time output visualization.
- Troubleshoot control flow and signal propagation issues, applying condition flags (Zero, Stack Pointer) and MUX redirection to resolve timing/display errors.

EDUCATION

New Jersey Institute of Technology *Newark, NJ*

Bachelor of Science in Computer Engineering **December 2025**

Relevant Coursework: Digital Design, Data Structures & Algorithms, Computer Architecture, Microprocessors & Embedded Systems, Circuits and Systems, Electronic Circuits, Signals and Systems, Digital and Computer Communications, Machine Learning

Cumulative GPA: 3.4