Obinna Nwachukwu

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Education

Georgia Institute of Technology　　January 2022 – May 2026 (Expected)
BS in Computer Science　　Atlanta, GA
Relevant Coursework
Systems and Networks, Design of Operating Systems, Design and Analysis of Algorithms, Objects and Design

Skills

Programming: C, C++, C#, Python, Java, JavaScript, SQL, HTML, CSS, PHP
Frameworks & Libraries: React, React Native, Node.js, Flask, Firebase, SQLite
Tools & Technologies: Git, Docker, Firebase, VS Code, Kubernetes, LaTeX, Azure
Systems: Windows, macOS, Linux, Unix, FileMaker Pro

Projects

AI Study Suite　　August 2024 – Present
Developed a suite of tools enabling AI models to interface seamlessly with lecture materials.
- Integrated HuggingFace Hub, Transformers, and llama_cpp to utilize state-of-the-art language models.
- Designed and implemented a user-friendly HTML/CSS/JS frontend with a Flask backend.
- Built a multi-model system for managing user intent, state tracking, and content indexing.
- Developed innovative tools to show off AI technology

AI-Powered Question and Answer Tool　　January 2024 – May 2024
Built a retrieval-augmented generation (RAG) tool using GPT-4 to answer user questions based on uploaded documents.
- Implemented vector storage and indexing for fast, scalable data retrieval.
- Optimized model interactions through prompt engineering, improving query relevance and accuracy.
- Developed a Streamlit front-end for seamless user interaction with AI capabilities.
- Packaged the tool in a Docker container to streamline installation and simplify maintenance.

5-Stage Pipelined Processor Design　　April 2024
Completed an advanced project for the Systems and Networks course, designing a 5-staged pipeline for a MIPS-like ISA.
- Designed and implemented a processor with Fetch, Decode, Execute, Memory, and Write-back stages.
- Developed custom microcode-based integrated controllers to optimize control signal generation.
- Optimized hazard detection by implementing data forwarding, minimizing NOPs and pipeline stalls.
- Achieved a **5.8x performance improvement** in linear programs; **4.3x improvement** in branch-heavy programs.
- Completed detailed technical documentation and performance analysis, receiving full marks for the implementation.

Experience

Georgia Tech School of Cybersecurity and Privacy　　August 2023 – May 2024
Student Assistant　　Atlanta, GA
Performed clerical tasks such as managing spreadsheets, correspondence, and preparing seminars.
- Helped onboard new members efficiently and consistently followed up on maintenance requests on their behalf.
- Assisted in the preparation and execution of events, including managing logistics and setting up refreshments.
- Maintained spreadsheets and documents, supporting a team of over 10 administrative staff in various projects.

iD Tech　　May 2023 – August 2023
Instructor　　Atlanta, GA
Delivered effective STEM instruction to young students in areas such as JavaScript, Game Design, and UX Design.
- Received overwhelmingly positive reviews **(over 90%)** from students, with requests for further one-on-one instruction.
- Achieved a **100% graduation rate** for all classes, with a high participation rate in daily exercises and activities.
- Taught effective debugging skills to students, which reduced questions over the course of the instruction period.