Chinenye Nwogu

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EDUCATION

Michigan State University - College of Engineering
Bachelor of Science, Computer Science **East Lansing, MI**
|GPA 3.3 / 4.0| May 2025

PROJECTS

Adaptive Driving Beam System October –December 2024

- Developing prototype for adaptive driving beam system that equips a vehicle to dim high beam headlights when other drivers are nearby, reducing glare for them; the system shall also shift the direction of the beams to the curvature and grade of the road, and away from other vehicles in some instances.
- As project facilitator, elicited 30 functional and non-functional system requirements from the customer through interviews, and conducted analysis in order to draft a clear software requirements specification for validation.
- Organize meetings and set deadlines to hold team members motivated and accountable. Correspond with write-ups and summaries to superiors, showcasing progress towards system prototype.

Custom Audio Synthesizer October 2024

- Developed an advanced audio synthesizer application in C++, enabling users to create and manipulate sounds with various instruments like piano, organ, and drums with 14 unique effects, for dynamic audio production.
- Engineered wave generation and envelope control systems to shape sounds with smooth attack and release transitions, ensuring high-quality sound synthesis and responsiveness to user input.
- Built a modular interface in Visual Studio 2022 for real-time sound manipulation using object-oriented programming principles, improving maintainability and expandability for future enhancements.

Jarvis AI Virtual Assistant May – July 2024

- Incorporated OpenAI's API with speech-to-text software development kits, to create an artificial intelligence virtual assistant on a Raspberry Pi 4 microcomputer, that responds to the user's vocal query with audio.
- To process input data, Amazon Web Services credentials were configured in order to host the program on the cloud, facilitating authentication and portability for use on the web.

EXPERIENCE

GHSP Inc. **Holland, MI**
Test Development Engineering Intern May 2023 – August 2023

- Constructed hardware for gear selector testing that utilized SAE J2716 SENT automotive communication protocol by selecting compatible components in accordance with diligent research; the assembled device was able to gather sensory diagnostics on 12 automobile gear selectors in a lab setting.
- Leveraged serial port communication and socket programming in a Linux environment to create embedded software that facilitated the transfer of sensory data between a Raspberry Pi 4 and an external SENT-enabled board with CAN bus, before uploading codebase to company's Apache Subversion.
- Reported research, electrical parameters, and other critical information on the device through writing a specifications document; team members reviewed document to understand the design process that lead to the hardware's fabrication

SKILLS

Programming: Python, C++, Object-oriented Programing, Embedded Software, Git, Linux, Software Testing, Object Oriented Modeling, Data Structures, Algorithms, Operating Systems, Audio Processing
Additional: Leadership, Initiative, Technical Communication, Collaboration, Flexibility, Time Management, Requirements Engineering, Software Engineering