Neal Jayaraman

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SUMMARY

I am a driven individual with experience in network-based Robot Operating System (ROS. I and II), and microcontroller programming. I've also built GUI-enabled applications that integrate microphone input with ChatGPT to create intelligent, interactive programs. I am seeking a position where I can expand my current software skillset to develop innovative embedded and network-based systems.

EDUCATION

University of Michigan – Dearborn GPA: 3.97
Bachelor of Science in Computer Science

Core Courses: Software Engineering, Database Management Systems, Data Structures & Algorithm Analysis, Operating Systems, Computer Organization & Assembly Language
Skills: ROS, ROS II, C++, Python, HTML/CSS, SQL, JavaScript, Kotlin
Software Applications: Git/GitHub, ArcGIS Pro, Arduino, QT Creator, Android Studio

EXPERIENCE

Wayne State University Robotics Lab, Summer internship (06/2023 – 09/2023):

- Wrote programs that integrated ChatGPT APIs
- Leveraged ROS nodes to send information across multiple computers
- Edited GUI files to initiate vocal descriptions
- Implemented ROS II on Windows to facilitate seamless data exchange
- Modified robot interfaces using QT Designer
- Used Arduino to control a microcontroller and components attached to it such as a motor

RELEVANT PROJECTS

- **RC Car Control via Website:** Developed an educational website that teaches coding by allowing users to control an RC car using drag-and-drop movement blocks powered by the Blockly API. These blocks are translated into Python commands and sent to the car through ROS for real-time control.
- **Voice-based ChatGPT Program:** Constructed a program in Python that when verbally asked how much a certain car model costs, will return the car's manufacturer, display its logo, and give a sample price. Used external software to enable voice input and the answers were pulled from an integrated ChatGPT API.
- **Robot Graphical User Interface:** Added buttons to a GUI, used to control a robot, that would launch ROS nodes and output audio recordings. Achieved by using ROS, ROS II, and QT Designer.
- **Media Player GUI:** Using C++ and QT Creator, I made a media player GUI. It allowed users to play videos with audio and had various media control like pause/play etc.
- **Collectibles Web Scraper:** Used web scraping to retrieve all collectibles from a website that were under a certain price and store this information in an Excel spreadsheet. It updates daily and notifies the user via SMS or email.