Neal Jayaraman

Cell: 313-324-6320 • Email: nealjman@umich.edu • Website: https://nealjman.github.io • Github: https://github.com/NealJman

SUMMARY

I am a senior currently pursuing a bachelor's degree in computer science. I have experience with network-based Robot Operating System (ROS. I and II), and microcontroller programming. Additionally, I've built GUI-enabled programs integrating with a microphone communicating with ChatGPT to create intelligent programs. I am seeking an internship position where I can build on my current software skills to construct challenging embedded and network-based software.

EDUCATION

University of Michigan – Dearborn GPA: 3.96
Expected Graduation: April 2025

Core Courses: , Software Engineering, Computer Networks & Distributed Processing, Operating Systems, Computer Organization & Assembly Language, Data Structures & Algorithm Analysis
Skills: Robot Operating System (ROS), ROS II, C++, Python, HTML/CSS, SQL, web scraping
Software Applications: Git/GitHub, ArcGIS Pro, Arduino, QT Creator

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

• **Sensor Reader:** Read input from a sensor that is attached to a microcontroller. Verified sensor was outputting the correct data values in Arduino and developed a program that would read from the sensor and publish the data values in ROS. It would update accordingly if the input was changed.

• **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 and QT Designer.

• **RC Car Control via Website:** Used a Blockly API to make custom movement and sensor blocks on a website that can be arranged to manipulate an RC Car. These are translated into Python code which is sent to a Flask sever running on Raspberry Pi OS. It is then executed as a script which controls the RC Car.

• **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.

• **Collectibles Web-Scraper:** Developed a web scraper to retrieve collectibles under a specified price from a website. Using the Pandas library, it stores the name and price in an Excel spreadsheet, which updates automatically each day. The user is notified of updates via SMS or email.

• **Media Player GUI:** Using C++ and QT Creator, I made a media player GUI. It allows users to play videos and use various media control like pause/play etc.