Maheer Sayeed

✉ maheersayeed@gmail.com | ▯ 716-598-3252 | 🌐 https://maheersayeed99.github.io | in linkedin.com/in/maheersayeed

EXPERIENCE

GENERAL MOTORS - Warren, MI | **July 2022 - Present**

Software Engineer | **May 2023 - Present**

- Full-stack software developer working on in-house data visualization and recording application for ADAS development.
- Designed, developed and tested multiple end-to-end features, working with our React, NestJS, C++, MongoDB tech stack:
  - ◇ Configuration pull feature that automatically extracts vehicle configuration files from inside the target and aligns it with the application. This massively improved the application's ability to adapt to changes in platform software.
  - ◇ Metadata edit feature that allows users to tag the output for individual recordings so that they are able to locate important recordings afterwards in our cloud database.
  - ◇ Low space warning feature that alerts the user and stops the recording when the host is critically low on space. This feature was vital in preventing vehicle computers from freezing when storage raids are not mounted properly.
  - ◇ Lidar point cloud visualization feature that subscribes to the data published by the vehicle on the C++ server, and efficiently sends it to the client side using protobuf, resulting in drastically reduced latency between the sensor and the pointcloud.
- Developed Python program to stress test in-house XCP protocol binary used for CAN signal visualization.
- Successfully used the program to automate 1000+ tests, and identified multiple edge-case bugs within the application, which significantly accelerated the delivery of the software to all engineers in the organization.
- Helped develop Python GUI that provides customers with user-friendly version control of our application, as well as organizing the deployment of multiple versions and flavors of the product.
- Primary integration engineer in the US, in charge of ensuring that all flavors of our application are delivered with high quality to their respective platforms.
- Completed 10+ release cycles since joining the team, investigating bugs, reporting them and often fixing them.
- Main point of contact for customers of our software in the US, having completed several debugging sessions to uphold the integrity of the product and speed up the development of ADAS software at General Motors.

Software Engineer | **Feb 2023 - May 2023**

- Worked in agile scrum team developing software for Ultra Cruise data collection operations.
- Developed multiple Python programs for post processing and validating Terabytes of camera, lidar, radar and gps data that was collected throughout the day:
  - ◇ Alignment validation program that detects mis-alignments and for each lidar/camera pairing on the vehicle.
  - ◇ RINEX file download tool that automatically retrieves and stores daily RINEX files used to supplement GPS data.
- Worked in a team to design the process and implement the technologies correctly so that post processing tools are automatically run on all the vehicles daily once they return from data collection.
- Incorporated failure detection and reporting to ensure continuous improvement of the process.

EDUCATION

CARNEGIE MELLON UNIVERSITY - Pittsburgh, PA

Master of Science in Mechanical Engineering | **Graduated May, 2022**

Bachelor of Science in Mechanical Engineering | **Graduated Dec, 2021**

GEORGIA INSTITUTE OF TECHNOLOGY - Atlanta, GA

Master of Science in Computer Science | **Expected Graduation Aug, 2026**

PROJECTS

Rubik's Cube Solving Robot 🌐 | **Summer 2022**

- Wrote algorithm with graph-generation and pathfinding to get semi-optimal solution for any scrambled Rubik's Cube.
- Developed color-classifier with OpenCV to detect state of the scrambled cube from webcam input.
- Designed and built unique 2-motor cube solving robot.
- Programmed ESP8266 board to control stepper and encoder motors with PID feedback loops.

SKILLS

Languages: Python, C++, NodeJS, JavaScript, TypeScript, Java, CSS, Bash, C, Arduino, MATLAB

Tools / Frameworks: Linux, Git, Docker, React, Express, NestJS, Android Studio, Postgresql, Playwright, Wireshark, Protobuf, OpenCV