ARAVINDH SRIRAM KUMAR A G

linkedin.com/in/aravindhsriramkumar aravindhsriram310@gmail.com

Academic Background

PSG College Of Technology **October 2020 - April 2024**

Bachelor of Engineering – Instrumentation and Control Engineering, ***CGPA: 9.01/10*** *Coimbatore, India*

Experience

Bosch Global Software Technologies Pvt. Ltd./ (Summer Intern) ***Feb-June 2024***

Coimbatore, India

- Developed a user-friendly UI for an automation tool using React.js, enhancing the tool's frontend interface.
- Integrated the frontend with a Python backend utilizing Flask server and Electron module, ensuring seamless interaction between client and server sides.
- Conducted data collection for fuel analysis using a photodarlington sensor and Arduino board, contributing to a machine learning project.
- Gained hands-on experience with the Software Development Life Cycle (SDLC) processes, understanding each phase in detail.

Proficiencies: [React.js, Flask, Python, Electron, Arduino, Machine Learning, SDLC]

Skills Summary

Languages: C, C++, Python, MatLab (Simulink), React.js

Hardware Knowledge: Embedded System basics, Instrumentation basics, Control system analysis

Other Skills: MS Office Tools, Report writing, Leadership

Projects

Predictive Maintenance for Pumps

- Built LSTM model for fault classification using vibration data, eliminating the need for more complex models.
- Chose temperature data for predicting Remaining Useful Life (RUL) of pumps, assuming the last dataset points as the failure point.
- Found that the Transformer model predicted RUL better than the LSTM model, validated through graphs and performance indicators.

Health Monitoring System for Pumps

- We developed a system to prevent pump failures by analyzing critical operational data.
- Sensors were integrated to continuously monitor bearing temperature and motor casing vibrations, enabling real-time data acquisition.
- Utilizing this data, we built a LSTM model to predict pump failures.

Electronic Travelling Aid for Visually Impaired

- The objective of this project is to give a working model solution to address the problem of blind navigation.
- The system uses user's location as input and alerts the caretaker of his location using a mobile app.
- It also helps the user to navigate avoiding obstacles in front of them.
- A working prototype is built to demonstrate the real time solution where an ESP 12E (NODE MCU) board is used to do all the input and output management task of the proposed embedded system.
- Presented this project as a paper in the Research Conclave 2023 held at PSG Tech.

Control of Robot Movement Through Mobile APP

- A chassis kit was used to construct a simple car-like robot.
- The movement of robot can be controlled through an app built from MIT App Inventor.
- An ESP-12E (NODE MCU) board is used to do control actions on the robot, and it acts as a wi-fi access point for communication between the App and robot.

Relevant Coursework

- Control System
- Operating Systems
- Microprocessors and Microcontrollers
- Data structures and Algorithms
- Computer Networks
- Embedded System Design

Honors and Awards

- Secured first place in an aptitude based intercollege event named Technotronz conducted by IETE students' chapter of PSG college of technology in my 2nd year.
- Selected to attend summer internship in the field of robotics from IIIT-Hyderabad clearing through three screening rounds in my 2nd year.

Activities / Responsibilities

- Served as class representative for my batch in the third (3rd) semester.
- Participated in a PLC workshop conducted by an industry resource person and organised by the I&CE department.
- Participated in AI for India event conducted by GUVI geek networks, IITM Research Park.