ARAVINDH SRIRAM KUMAR A G

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EDUCATION

PSG College of Technology   2020 - 2024
Bachelor of Engineering in Instrumentation and Control Engineering
CGPA – 9.04

Jawahar Higher Secondary School   2018 - 2020
Score - 93%

WORK EXPERIENCE

Student Trainee - Bosch Global Software Technologies   02/2024 - 06/2024
- Developed a user-friendly UI for an automation tool using **React.js and Electron.js** enhancing the tool's frontend interface.
- Successfully completed comprehensive testing for the automation tool and integrated the frontend with a **Python** backend utilizing a Flask server and Electron module, ensuring seamless interaction between client and server sides.
- Conducted data collection for fuel analysis using a photodarlington sensor, contributing to a **machine learning** project's data segregation for the model training phase.
- Gained hands-on experience with the Software Development Life Cycle (**SDLC**) processes, understanding each phase in detail.

Summer Intern - Indian Oil Corporation Limited   06/2023 - 07/2023
- Analysed **industrial-scale sensor networks** and **data collection systems** at Guwahati refinery, gaining exposure to real-time monitoring infrastructure.
- Documented comprehensive **instrumentation systems** and **control protocols** used in refinery operations, demonstrating technical analysis capabilities.
- Delivered technical presentation on **industrial automation systems**, showcasing ability to understand and communicate complex operational processes in **oil & gas** sector.

PROJECTS

Predictive Maintenance and Health Monitoring for Pumps

- Integrated sensors for real-time monitoring of **bearing temperature** and **motor vibrations** to collect operational data efficiently.
- Designed and implemented LSTM-based models for fault classification, achieving a high classification accuracy of **97%**.
- Utilized Transformer model to predict Remaining Useful Life (RUL) with superior accuracy, enabling proactive maintenance strategies.
- Validated model performance through confusion matrices and graphical analyses, ensuring reliable fault detection and RUL prediction.

Electronic Travelling Aid for Visually Impaired

- Designed and implemented a navigation aid to assist visually impaired individuals, integrating obstacle detection and location tracking functionalities.
- Utilized **ESP 12E** (NODE MCU) board for efficient input-output management, achieving real-time processing with minimal latency.
- Developed a mobile app to alert caretakers with real-time location updates, enhancing user safety and communication.
- Built a working prototype demonstrating a functional embedded system.
- Presented the project as a research paper at the Research Conclave 2023, PSG Tech, earning recognition for innovation in embedded systems.

Control of Robot Movement Through Mobile APP

- Developed robot movement control system using a mobile app built with MIT App Inventor.
- Integrated ESP-12E (NODE MCU) board for Wi-Fi communication between the mobile app and robot.
- Designed and constructed a car-like robot chassis for remote control via a mobile app.
- Ensured seamless interaction between mobile app and robot via Wi-Fi connectivity.
- Tested and validated real-time control of robot movement from the mobile app.

RESPONSIBILITY AND ACHIEVEMENTS

- **Secured 1st place** in the aptitude-based intercollege event *Technotronz* conducted by the IETE Students' Chapter of PSG College of Technology.
- **Selected for a summer internship** in robotics at IIIT-Hyderabad after successfully clearing three screening rounds.
- **Served as Class Representative** for my batch during the 3rd year, demonstrating leadership and organizational skills.
- Participated in a PLC workshop conducted by industry experts, organized by the I&CE department.
- Took part in the AI for India event conducted by GUVI Geek Networks, held at IITM Research Park, showcasing interest in emerging technologies.

SKILLS

Python	Data Structures and Algorithms	Control System	C/C++
Flask	Machine Learning	React.js	Operating System