A P Vijay Baskar

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Summary

Motivated Electronics and Communication Engineering undergraduate with strong expertise in embedded systems, IoT development, and full-stack web technologies. Seeking an entry-level role to apply my skills in microcontroller programming and IoT systems to contribute to innovative technological solutions.

Education

Kalasalingam Academy of Research and Education **2022 – 2026**
B.Tech. in Electronics & Communication Engineering
Relevant Coursework: Embedded Systems, Microcontrollers, IoT Systems

Annamalaiyar Matric Higher Secondary School **2020 – 2022**
Higher Secondary Certificate (HSC)
Stream: Computer Science with Mathematics

Technical Skills

Languages: C++, Python, Embedded C

Microcontrollers: STM32, Raspberry Pi, ESP32, Arduino

Tools: STM32Cube, Arduino IDE, VS Code, Git

Server: SQL, MongoDB, Firebase

Others: Linux, IoT Protocols, REST API

Projects

Ambulance Traffic Signal Controller **Jun 2024 – Jul 2024**

Problem: Emergency vehicles delayed by traffic signals, risking lives.

Challenges: Synchronizing real-time ambulance location with traffic signals; ensuring reliable communication between mobile apps and hardware.

Solution: Developed two Flutter apps (for police and ambulance drivers) using Google Maps APIs and Firebase for real-time routing and hospital/police coordination. Prototyped with STM32 and ESP32 to detect ambulances within 1 km and clear signals. [Demo]

Impact: Reduced emergency response time; won 1st place in Arduino and Robocraze competition.

Glucose Monitoring System **Jan 2025 – Mar 2025**

Problem: Patients lack accessible, real-time glucose monitoring and personalized health insights.

Challenges: Ensuring accurate data transfer from sensors to Firebase; integrating AI for diet recommendations.

Solution: Built a Flutter app with secure login, powered by ESP32 to send glucose data to Firebase and BigQuery. Integrated Google Gemini AI for diet plans and automated hospital appointment booking with report generation. [Demo]

Impact: Empowered patients with real-time health management; used by healthcare providers for remote monitoring.

Bluetooth Attendance Remote **2024**

Problem: Manual attendance tracking is time-consuming and error-prone.

Challenges: Designing a compact, reliable Bluetooth device with intuitive controls.

Solution: Developed a pocket-sized ESP32-based remote with 5 buttons for Dr. Jenyfal Sampson. Features rechargeable battery and reliable Bluetooth connectivity. [Demo]

Impact: Streamlined attendance in classrooms and labs; praised for efficiency and portability.

Freelancing & Training

Delivered 60+ freelance projects in IoT and automation since 2024.

Conducted workshop on **Raspberry Pi & IoT Projects** for peers, focusing on sensor integration.

Certifications

Internship in STM32 Programming, 2024

Workshop - Advanced ML for IoT Applications, 2024

Achievements

1st Place – MathFlix, VINTRAC 2024

2nd Place – IOTRONZ, VINTRA 2024

1st Place – Arduninon Hackathon, VINTRA 2023

3rd Place – IOTRONZ, VINTRAC 2023

2nd Place – Arduino Project-a-thon by Robocraze, Jul 2024

2nd Place – Sustainability Hackathon, Euphoria 2024