PRASAANTH L, Embedded engineer
prasaanth.x.lakshmi@gmail.com|LinkedIn® Profile Github® Profile |+91 7871347863 | +91 9841564566

PROFILE SNAPSHOT

An exceptionally skilled professional with a strong focus on embedded systems, boasting a solid track record of 2 years in the field. Specializing in key areas such as CAN, BLE, GNSSand WiFi, I possess extensive expertise in developing and implementing solutions for embedded systems. Currently, I am actively engaged in working on Embedded Linux, further expanding my knowledge and honing my skills in this cutting-edge technology. With a passion for innovation and a commitment to delivering high-quality results, I consistently thrive in dynamic and challenging environments. I bring a unique blend of technical proficiency, industry experience, and a proven ability to deliver exceptional outcomes.

FUNCTIONAL EXPERTISE

- **CAN**
- **BLE and bluetooth classic**
- **WiFi**
- **Embedded Linux**
- **GNSS**
- **FreeRTOS**

NOTABLE ACHIEVEMENTS (Max 3 - 4 Points)

- Developed a cutting-edge **RTK-based GNSS** system, delivering precise positioning solutions for various applications.
- Successfully designed and implemented an **image processing** and **automatic braking** system for Heavy machinery in BEML, enhancing safety measures and reducing accidents.
- Implemented a highly efficient **blind spot detection** system using **RPLidar** A1M8, effectively mitigating risks and enhancing situational awareness.
- Created a robust **BLE** (Bluetooth Low Energy) library utilizing Apache NimBLE, enabling seamless communication and connectivity for IoT devices.
- Currently working on a personal project focused on **lane detection**, integrating real-time streaming protocol (**RTSP**) for live video feed and automatically placing indicators during lane changes.

FUNCTIONAL EXPERTISE DEMONSTRATED

HACKLAB SOLUTIONS
09/21 – Present
An industrial safety firm with 5 embedded employees.
Job Title
A General information about the responsibilities of this role, reserving details for bullet points.

I have consistently demonstrated exceptional functional expertise in the field of embedded systems, combining my technical skills with a strong focus on delivering practical solutions. In addition to my notable achievements, I have a proven ability to design product PCBs and ensure their maintenance, ensuring optimal performance and reliability. This includes proficiency in generating firmware, enabling seamless integration and functionality across hardware and software components.

Moreover, I possess extensive experience and expertise in working with I2C and UART protocols. I am well-versed in implementing these communication protocols, leveraging them for data transfer and device interaction in embedded systems. This expertise has been crucial in my successful

development of various projects, ensuring efficient and reliable communication between different components.

My comprehensive understanding of PCB design, firmware development, and mastery of I2C and UART protocols has enabled me to consistently deliver high-quality solutions in the embedded systems domain. I have a proven track record of effectively leveraging these skills to design and develop innovative products while meeting project requirements and industry standards.

With my solid foundation in embedded systems and proficiency in various aspects of hardware and firmware development, I bring a well-rounded skill set to drive success in future projects. I remain dedicated to staying updated with the latest advancements in the field, continuously expanding my expertise to deliver cutting-edge solutions that push the boundaries of embedded systems technology.

RELEVANT PROJECTS

- **RTK-Based GNSS System:** Led the design and development of a real-time kinematic (RTK) based GNSS system, delivering precise positioning solutions for various applications. Implemented advanced algorithms and optimized hardware integration to achieve high accuracy and reliability.

- **Image Processing and Automatic Braking System for Heavy Machinery in BEML:** Spearheaded a project to develop an image processing system integrated with an automatic braking mechanism for heavy machinery. Utilized computer vision techniques to detect obstacles and implemented an intelligent braking system for enhanced safety and accident prevention.

- **Blind Spot Detection using RPLidar A1M8:** Designed and implemented a blind spot detection system using RPLidar A1M8, enabling the identification of objects in blind spots. Developed algorithms for object detection and implemented real-time alerts to improve driver awareness and prevent collisions.

- **BLE Library using Apache NimBLE:** Developed a versatile Bluetooth Low Energy (BLE) library using Apache NimBLE, providing a robust and efficient communication framework for IoT devices. Created a comprehensive set of APIs and implemented seamless connectivity features, enabling reliable data transfer and device interaction.

- **Lane Detection with RTSP Live Streaming:** Currently working on a personal project focused on lane detection. Integrating real-time streaming protocol (RTSP), the project aims to detect lane boundaries and automatically place indicators during lane changes. Implementing computer vision algorithms and leveraging live video feed for accurate lane detection and enhanced driver assistance.

EDUCATION

Bachelor of Engineering (B.E.,) *E&I*. Panimalar College of Engineering (Anna University, Chennai)

HSC (Math and Computer Science). Sri Shankar Vidyalaya (Chennai)

Additional Professional Development (4 maximum):

- Linux Kernel Development (Certificate) – Linux Kernel Foundation(03/23 - 08/23)

VOLUNTEERISM

Comic Con – Stage and crowd management: As the stage and crowd manager at Bengaluru Comic Con in November 2022, I successfully oversaw the smooth flow of activities on the stage, including panel discussions, celebrity appearances, and cosplay contests. I implemented effective crowd management strategies, ensuring safety and order while engaging attendees and providing a positive experience for all participants.

OTHER RELEVANT INFORMATION

Additional Languages: English,Tamil,Hindi

Technical Skills: Embedded Linux,FreeRTOS,PCB Design, Socket programming.