Jayanth H A

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Career Objective — With over 2.5 years of specialized experience in embedded software development for the automotive sector, I am seeking a dynamic and challenging role to leverage my expertise in C, C++, and real-time systems. A position that enhances my skills in automotive communication protocols (e.g., CAN, RTP, AVB) and SiL frameworks, while offering opportunities to innovate and lead advanced technology implementations in vehicle electronics and safety systems.

Skills

- **Programming Languages:** C, C++
- **IDE:** VS Code, Cursor
- **Platforms:** Linux, Windows
- **Protocols:** CAN, Ethernet, RTP, TCP, UDP
- **Tools:** Bazel, CMake, Clang Compiler, Git/ Gerrit, Vector CANoe, Plastic SCM.
- **Specializations:** Real-time Performance Optimization, MISRA Compliance, Multi-threaded Programming (POSIX APIs)

Experience

Actevia Technology Services Pvt Ltd **Jan 2024 – Present (2 years)**
Software Engineer *Bengaluru, Karnataka, India*

Overview

- Over 2 years of experience in embedded software development for the automotive domain, proficient in C and modern C++ with a focus on real-time performance and MISRA compliance.
- Skilled in multi-threaded application development using POSIX APIs on embedded Linux, and experienced in testing and debugging embedded applications in virtual environments.
- Implemented RTP-based real-time multimedia streaming over AVB networks and designed IPC mechanisms using shared memory, message queues, and sockets.

Project: Re Simulation (Software In Loop - SIL)

- Engineered and maintained the Software-in-the-Loop (SiL) framework using C and C++, enabling PC-based multi-sensor virtual test drives for ADAS validation.
- Integrated ADAS feature modules into the SiL framework, ensuring accurate emulation of real-world driving scenarios and corner cases.
- Developed and validated CAN signal handling logic using AUTOSAR-compliant structures, utilizing Vector CANoe and CAPL scripting for testing.
- Managed Git-based workflows, including branching, merging, and conflict resolution, to maintain code integrity across development teams.
- Optimized system performance through static analysis and memory profiling, implementing code refactoring to reduce RAM usage and improve execution speed.

Project: Audio Video Bridging

- Implemented a real-time audio/video streaming solution using RTP over TCP and UDP on embedded Linux, utilizing multi-threaded programming with POSIX APIs for low-latency performance.
- Designed and optimized resource allocation, including memory footprint and CPU core usage, to ensure efficient operation on automotive Ethernet networks.
- Integrated RTP streams with ALSA and GStreamer pipelines for synchronized multimedia playback and device routing.
- Conducted network performance validation, analyzing latency, jitter, and packet loss to ensure reliable transmission in test vehicle environments.

Education

Adichunchanagiri Institute of Technology, Chikkamagalur **2018 – 2023**
B.E. in Computer Science and Engineering *Visvesvaraya Technological University*
- Achieved CGPA of 6.5/10.
- Developed skills in embedded systems and wireless communication through academic projects.

Master's PU College **2017 – 2019**
12th Standard *Dept. of Pre-University Education*
- Secured 76.33/100.

Royal Apollo International School **2015 – 2016**
10th Standard *Karnataka Examination Board*
- Achieved 88.98/100.

Projects

Sarcasm Detection **Feb 2023 – Mar 2023**

Internship Project at Fundamentals Pvt Ltd, Chikmagalur

- Created a comprehensive dataset for sarcasm detection.
- Developed a robust sarcasm detection model using advanced machine learning techniques.
- Performed feature engineering to capture sarcasm nuances.
- Conducted rigorous evaluations and refined the model iteratively.
- Prepared documentation and delivered engaging presentations to stakeholders.

Movie Tickets Booking Management System **May 2021**

- Designed a movie ticket booking system using PHP for the frontend and SQL for the backend.
- Utilized DBMS for seamless data storage and retrieval.

An Efficient V2X Vehicle Localization Using Single RSU and Single Receiver **Oct 2022 – Feb 2023**

Adichunchanagiri Institute of Technology, Chikkamagalur

- Installed and tested hardware components including Raspberry Pi, NRF24L01, GPS module, and sensors to ensure proper functionality.
- Designed the system architecture, strategically placing a single RSU along a road segment and integrating a receiver within a vehicle to act as a communication hub.
- Selected and implemented the IEEE 802.11p protocol, optimizing for low-latency and reliable V2X communication between the RSU and vehicle.
- Configured sensor interfaces and validated data transmission accuracy to support real-time vehicle localization.
- Collaborated with team members to simulate traffic scenarios, enhancing the system's ability to provide critical safety information.
- Documented the hardware setup and communication protocol implementation, contributing to a comprehensive project report.
- Conducted performance testing to measure signal strength and packet delivery rates, ensuring robust communication under varying conditions.

Certifications

- Python Programming Course (University of Michigan, Coursera)
- Command Line Course (Progate)
- From Novice to Expert: Mastering C++ Programming Certificate (Codedamn)
- Technical Support Fundamentals (Coursera)
- Penetration Testing, Incident Response, and Digital Forensics (IBM)
- Official ISC2 CC Online Self-Paced Training (ISC2)

Personal Information

- **Date of Birth**: 24th January 2001
- **Gender**: Male
- **Languages**: English, Hindi, Kannada, Telugu
- **Hobbies**: Drawing, Travelling, Listening to Music