BIBIN ALIAS

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Highly skilled professional with over 7 years (3 years - vocational) of experience as an embedded software engineer and 5 years of open work permit in Canada. Proven expertise in delivering high-quality solutions and identifying critical issues. Adept at designing and implementing efficient test frameworks to streamline processes. Proficient in collaborating with cross-functional teams and providing technical guidance. Strong problem-solving abilities and a keen eye for detail. Seeking high-end tech roles to leverage skills and contribute to cutting-edge projects.

EXPERIENCE

Software Engineer – Product Engineering
Thinkpalm Technologies | Nov 2022 - Present

Responsibilities:
- Develop and maintain Bluetooth and Wi-Fi device drivers, ensuring compatibility with various operating systems and hardware configurations.
- Identify and resolve bugs in the firmware of the Wi-Fi device through Coverity bug fixing.
- Add new features and functionality to the Wi-Fi and Bluetooth device drivers, based on project requirements.
- Collaborate with cross-functional teams to ensure seamless integration of the drivers into the overall system architecture.
- Conduct code reviews and perform debugging to optimise the performance and reliability of the drivers.
- Utilise tools like Wireshark for network analysis and debugging purposes.
- Follow software development best practices and coding standards to ensure high-quality and maintainable code.
- Use version control systems, such as git, to manage code repositories and track changes.
- Adhere to project schedules and deadlines, effectively managing priorities and multitasking.
- Participate in team meetings and provide regular progress updates on assigned tasks.
- Stay updated with the latest industry trends and technologies in Bluetooth and Wi-Fi device driver development.

Key highlights:
- Developed and tested Bluetooth features on chipsets. Utilized debugging tools and code review processes to ensure the deliverables were of high quality.
- Investigated and resolved defects on existing code bases across multiple vendor platforms.
- Deep understanding of Bluetooth subsystem source code flow and wireless networking fundamentals.
- Knowledge of Bluetooth protocols (GATT, GAP, HCI).
- Experience with debugging tools (Vim, Wireshark) and code review processes (Git, Gerrit).
- Developed and tested WLAN features on chipsets. Utilized debugging tools and code review processes to ensure the deliverables were of high quality.
- Deep understanding of WLAN subsystem source code flow.
- Knowledge of WLAN protocols (802.11x) Resolved firmware bugs in CL8000 Wi-Fi chip using Coverity, enhancing stability and reliability.
- Did changes for load and run driver with Linux Supplicant from open source using insmod.
- Added new features to meet project requirements, improving functionality and user experience.
- Did changes to Accommodating Wi-Fi and Bluetooth in one CL6000 chip.
- Awarded for contribution and commitment as a valued member of the team.

Software Engineer – Embedded Systems
Gadgeon Smart Systems | Apr 2021 – Nov 2022

Responsibilities:
- Developed, tested, and maintained software applications.
- Collaborated with cross-functional teams to gather requirements and design software solutions.
- Wrote efficient and clean code according to coding standards and best practices.
- Debugged and resolved software defects and issues.
- Conducted software testing and quality assurance activities.
- Partook in code reviews to ensure code quality and maintainability.
- Documented software designs, processes, and procedures.
- Provided technical support and troubleshooting assistance to end users.

Key Highlights:
- Responsible for the design and development of the Controller Interface and User Interface for the HVAC System (IoT feature).
- Developed respective Linux applications for MQTT (libmosquitto, mDNS), Zigbee (MGM210) and Bluetooth (bluez) interfaces.
- Designed and developed network co-processor application for Z-Wave (ZGM130) communication.
- Designed and developed device driver for ADS8668(SPI).
- Conducted final board bring-up of the HVAC system and testing using equipment like a logical analyzer.
- Experienced in Linux platform and Embedded Linux (Yocto).
- Designed and developed Model View Controller (MVC) Test Fixture Application using Python.
- Created user interface designs (PyQt5) for Test Fixture Application.
- Developed test automation using Python and Embedded C.

Firmware Engineer - R&D
Transight Systems | Nov 2019 – Apr 2021

Responsibilities:
- Developed and debugged firmware code for embedded systems.
- Collaborated with hardware engineers to ensure seamless integration of firmware with hardware components.
- Conducted testing and verification of firmware to ensure functionality, reliability, and performance.

- Troubleshoot and resolve issues related to firmware functionality and compatibility.
- Maintained documentation and version control of firmware code.
- Collaborated with cross-functional teams to define requirements and specifications for firmware development.
- Provided technical support to internal teams and customers regarding firmware-related inquiries.

Key Highlights:

- Attained experience in FreeRTOS 10 and Open CPU, specialising in firmware development.
- Designed and developed drivers for W25Q128JV (QSPI) and LIS2DE12 (I2C).
- Completed numerous successful projects in the Internet of Things (IoT) field using ARM microcontrollers.
- Proficient in communication protocols such as CAN, I2C, QUAD SPI, RS 485, and RS 232.
- Developed algorithms for harsh acceleration/braking and tilt/rash turn using LSM6DS3 and LSM6DSL IMU for AIS 140 devices.
- Conducted hardware and firmware testing of various IoT devices, leveraging Python programs for Automotive Research Association of India (ARAI) certification.
- Knowledgeable about 4G, 2G modules (EC25, MC60) and GNSS(GPS) modules (L89, L86).
- Skilled in reverse engineering and proficient in equipment like an oscilloscope for final board bring-up and testing.
- Proficient in Orcad 9.2 for schematic design and PCB testing.

PROJECTS

Ready to use Portable harsh Acceleration and Braking Tilt and Rash turn sensing Device - 2019
Designed and developed self-learning algorithms for harsh acceleration/braking and tilt/rash turn using IMU.

Driver for High Efficacy Brushless DC Motor - 2019
Incorporated a feedback system in the driver, ensuring operational stability and maximising the efficiency of the 'patented' Brushless DC Motor.

Refreshable Braille Display -2018
Introduced a solution to enable blind individuals to access Portable Document Format (PDF) files by using Braille characters for reading.

Smart Welding Glass with Auto-Shutter Technology - 2017
Designed this eyeglass to safeguard the eyes from arc eye while also measuring the welder's efficiency, working time, welding time, and the number of welds completed per day.

Android Touchscreen Web KIOSK - 2015
An Android touchscreen web kiosk was introduced for the students at Govt. Polytechnic College in Kothamangalam. This kiosk enabled them to access the respective website, www.tekerala.org, allowing them to easily find their profiles and obtain information about their academic status.

ACHIEVEMENTS AT COLLEGE

Letter of Appreciation from Executive Vice President, Kerala State Council for Science, Technology & Environment for excellent contribution for TechFest 2017 of KSESTE.

EDUCATION

B-TECH (6.34 CGPA) – 2018 (Electronics & Communication Engineering)
Mar Athanasius College of Engineering – Mahatma Gandhi University, Kerala
DIPLOMA (8.13 CGPA) – 2015 (Electronics Engineering)
Board of Technical Education, Kerala

MATRICULATION (93%) – 2009 (Science with Biology)
Board of Public Examinations, Kerala

SKILLS

Advanced: C, Embedded C, Python, Eclipse IDE, Atolic TrueSTUDIO, Simplicity Studio, Microsoft Visual Studio Code, STM 32 Cube MX, PyCharm, LaTeX, Open Office, MS Office, Ubuntu Desktop and Microsoft Windows.

Intermediate: Git, Jira, Coverity, Keil, Wireshark, SlickEdit Pro, Orcad Capture CIS & Layout Plus, Proteus 8 Professional, Qt Designer, Bash, Sublime, nano, vi and Express PCB & SCH.

Basic: MicroPython, 8051 Assembly language, 8085 Assembly language, Atmel Studio, Matlab, HTML, HDL, SG 2 Client, Xilinx ISE and SynaptiCAD.

Hardware Testing: Two Channel Digital Storage Oscilloscope, Dual Channel Oscilloscope, Signal Generator and Function / Arbitrary Waveform Generator

Others: Experience in 5S Standardised Laboratory, BeagleBone Black, Arduino and Raspberry Pi.

POSITIONS OF RESPONSIBILITY

COFOUNDER | 2015-2018
IoT Club, Mar Athanasius College of Engineering.

- Worked on multiple projects and systems utilising Arduino and Raspberry Pi.

STUDENT COORDINATOR | 2015-2018
Industrial Entrepreneurship Development Cell, Mar Athanasius College of Engineering.

- Actively participated in diverse training programs helped develop leadership qualities and fostered a spirit of encouragement.

EVENTS COORDINATED

- Ethical Hacking and Cybersecurity Workshop, 2018
- Market Summit, Kerala Technological Congress and Techfest of KSCTE, 2017
- IoT Workshop, 2016

TRAINING/CERTIFICATIONS

- IoT: Converging Technologies for Smart Environment National Workshop (2017)
- IoT with Microsoft Azure (2017)
- Entrepreneurship Awareness Camp (2016)
- Metabotics Workshop (2015)
- Robotic Workshop of National Robotic Championship (2014)
- High Power Transmitter Station, Doordarshan (2014)