

Anand Mohan

Embedded Firmware Developer

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Pursue dynamic roles in Firmware Development, focusing on Presales and providing solutions as a consultant or delivery partner within reputable organizations across North America, Europe, APAC, Malaysia, Singapore, and Australia.

Professional Summary

Over 19 years of expertise in Embedded Systems Engineering, specializing in embedded C/C++, Assembly Language Programming and Firmware Programming with RTOS and Event-driven firmware programming without RTOS.

Work Experience

Mar 2023 - Jan 2025

Embedded Software Engineer

Mind Teck (Bayan Lepas, Penang, Malaysia)

As an Embedded Software Engineer at Motorola Solutions, contributed to enhancing product stability and team efficiency through proactive problem-solving and collaborative initiatives. Fostered a culture of continuous improvement and technical excellence within the team.

- Collaborated with global engineering teams to resolve critical stability issues on wireless Bluetooth products.
- Acquired advanced debugging skills while redesigning and enhancing firmware for Motorola Wireless Connectivity Products, resulting in improved product reliability and performance.
- Successfully implemented optimized Bluetooth firmware, ensuring stable wireless connectivity and enhanced user experience.
- Designed and developed new product features within a real-time operating system (FREERTOS) environment using C programming language.
- Utilized knowledge of various communication protocols and peripherals to develop and integrate new product features.
- Participated in all phases of the Software Development Life Cycle (SDLC), from requirement analysis and design to coding, testing, and documentation.

Oct 2020 - Oct 2022

Firmware Engineer

Persolkelly (Bangalore)

As Firmware Engineer at Medtronic, contributed to product development, safety, and user experience. Conducted comprehensive training sessions for peers on advanced firmware development tools and techniques, thereby elevating the team's overall technical capabilities.

- Led firmware development efforts utilizing C++ for a complex embedded system within the Medtronic medical device portfolio.
- Developed and executed comprehensive design, verification, and validation plans in compliance with stringent medical device safety standards.
- Generated essential documentation including user manuals and troubleshooting guides to support product deployment and ensure user understanding.
- Implemented a robust firmware update mechanism that significantly enhanced update success rates, guaranteeing seamless user experiences while adhering to industry standards.
- Collaborated with cross-functional teams, incorporating user feedback into firmware design, which increased user satisfaction ratings.

Jan 2020 - Oct 2020

Lead Engineer

Adecco (Bangalore)

As Lead Engineer at Boeing, responsible for leading software development initiatives and supervising software team performance.

Soft Skills

- Communication
- Collaboration
- Problem-solving
- Analytical Skills
- Adaptability
- Time Management
- Teamwork
- Attention to Detail
- Leadership

Technical Skills

- Embedded C
- Embedded C++
- Python
- RTOS
- ARM
- Firmware Development
- Debugging
- Testing
- Device Drivers
- Embedded Linux
- Multithreaded programming
- Programming data transfer over SPI, I2C, UART

Core Competencies

- Embedded Software Development
- Firmware Design and Implementation
- Real-time Systems Engineering
- Problem-Solving and Optimization
- System Integration, Debugging and Testing

- Developed and maintained software system requirements, algorithms, and designs using Python within a structured development framework, adhering to Boeing's stringent quality standards.
- Created and executed comprehensive software verification plans and test procedures, ensuring robustness and reliability of software systems for aerospace applications.
- Led software project management and supplier management functions, coordinating with internal teams and external vendors to guarantee on-time project delivery and adherence to budget constraints.

Achievements:

Implemented a novel software performance tracking system, ensuring efficient project execution, high-quality deliverables and adherence to rigorous aerospace industry standards.

May 2017 - Aug 2019

Senior Engineer - Embedded Software

L&T Technology Services Ltd. (Bangalore)

As Senior Engineer - Embedded Software at Intel, played a crucial role in developing and optimizing audio testing processes. Analyzed test results, maintained meticulous defect records, and actively championed innovative testing solutions. Cross-functional collaboration ensured enhanced product performance and accelerated time-to-market for Intel's audio solutions.

- Developed automated Python scripts for efficient and reliable MCU-based audio testing, improving the testing process for Intel's audio products.
- Designed and developed a parameter-based playback Capture Test Application using C for comprehensive audio verification, enhancing product quality and performance.
- Validated the MCU ESP32 for audio testing, ensuring its suitability for Intel's audio product development.
- Maintained and updated RQM databases, mapping new features into the test suite to align with evolving product requirements.

Achievements:

- Designed and implemented a comprehensive testing framework that significantly increased testing efficiency, resulting in reduced time-to-market for Intel's audio products.
- Collaborated effectively with product teams to define and refine audio specifications, leading to improvements in key product performance metrics.

Aug 2015 - Jan 2017

Sr. Engineer

Einfochips|Consulting Services | PES Division | Contractual Basis (Bangalore)

As a Sr. Engineer at Broadcom, collaborated with a global, cross-functional team, directly reporting to the Manager of Software Engineering in San Jose, California. Focused on developing and validating solutions for physical layer products, ensuring their successful integration into Broadcom's product portfolio.

- Developed scripts for High-Speed Interface (HSIP) device verification and validation, ensuring the quality and reliability of Broadcom's physical layer products.
- Worked as part of a global team to develop and validate SDKs for Gigabit Ethernet switches in a Linux environment, contributing to the successful deployment of data server solutions.
- Developed and executed standalone C scripts and command-line scripts on the BCM-user prompt in Linux, automating tasks and improving development efficiency.

Feb 2015 - Feb 2017

Sr. Engineer (Level 1) - Product Engineering Services

Einfochips (Ahmedabad)

As Sr. Engineer (Level 1) in Product Engineering Services, contributed to the development and implementation of effective quality assurance processes. Identified critical areas for performance enhancement through rigorous analysis and validation of embedded software.

- Designed and executed comprehensive test cases to validate embedded software functionality, ensuring product quality and reliability.
- Performed root cause analysis on identified software defects, proposing and implementing corrective actions to improve product performance and stability.

Feb 2013 - Feb 2014

Sr. Software Engineer

HCL Technologies (Noida)

As a Sr. Software Engineer, contributed expertise in memory management, multi-core processing, and assembly language optimization. Successfully collaborated with a diverse, global team to deliver high-performance software solutions for Sony Corporation.

- Collaborated with a global team at HCL Technologies to develop and deliver software solutions for Sony Corporation, aligning with the Japanese Solution Architect's vision.
- Designed a memory map solution to relocate process data from auxiliary memory to primary memory, resulting in significant system performance improvements.

- Utilized multi-core processing techniques in C and optimized assembly language programming to leverage all 6 cores of the processor, achieving substantial time savings in data processing.

Achievements:

Enhanced time optimization by seamlessly transferring process data from auxiliary to primary memory through a custom set of system APIs.

Feb 2004 - Feb 2013

Embedded Engineer

PREVIOUS WORK EXPERIENCE

- Spark Lab, Noida-Embedded Design Engineer
- Tech Centaurus Embedded Solutions, Noida-Technical Team Leader
- Thinnkware, Noida-Research Team- Team Leader
- Sangam Projects (Pearl Creations), Delhi – (Freelance Assignment)
- ESL India Limited (Secure Meter), Udaipur
- Tiet-Tico, New Delhi
- UTL Technologies Ltd., Secunderabad, Pune, Bangalore
- Chip Integration Technologies Limited, Bangalore
- Hinduja TMT, Bangalore

Education

MBA in Business Analytics

REVA Academy For Corporate Excellence, Bangalore
(Oct 2023)

B.E. in Electronics and Communication

Visvesvaraya Technological University, Bangalore
(Jun 2003)

Achievements

- Awarded "Predictive Analytics Modeler - Mastery Award" by IBM, demonstrating a strong foundation in data analysis and its application in software development.
- Graduated with an MBA in Business Analytics from Reva University, achieving First Class with Distinction and a CGPA of 8.04 out of 10, which reflects a strong academic foundation and commitment to excellence.
- Independently developed two firmware feature applications, Conductivity Calibration and Fluid Pressure Calibration, each consisting of 10,000 lines of code. Collaborated with fellow firmware developers to support and assist in 4 to 5 additional features.
- Assumed full ownership as Feature Architect for new assignments across diverse domains and technologies. Elevated team's technical capabilities through comprehensive reviews and technical discussion sessions. Led root cause analysis of embedded software, identifying critical areas for performance enhancement.
- Engineered code optimizations for the SPI module, reducing time lags by 200 microseconds, and enhancing data transfer efficiency for large-scale transmissions.

Certifications

- **Embedded Linux System Internals** (Timmins, Penang, Malaysia, December - 2024)
- **Predictive Analytics Modeler - Mastery Award** (IBM - 2020)
- **Embedded Linux on ARM** (Emertxe Technologies, Bangalore, April - 2017)
- **Embedded Linux with ARM & Device Drivers** (Emblogic Embedded Technologies, Noida, June-Nov - 2014)
- **Linux Device Drivers** (Miracle Technologies, Noida, February-June - 2014)
- **Advanced Diploma in Embedded Systems** (Cranes Varsity, Bangalore, Mar-Oct - 2005)

Languages

English, Hindi

GitHub: <https://github.com/Embedded-org>

Project Paper: https://link.springer.com/chapter/10.1007/978-981-99-5792-7_18

Capstone Project 1 & 2: <https://www.youtube.com/@embedded-org6740>