Anugayathiri Pugazhenthi
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Summary

- Experienced Embedded Linux System Software Engineer with hands-on expertise in kernel compilation, U-Boot, root filesystem customization, and integration of third-party libraries tailored to system requirements.
- Skilled in developing and automating functional test cases in C, and proficient with C/C++ and object-oriented programming (OOP) concepts.
- Extensive experience with UNIX/Linux interprocess communication mechanisms including shared memory, pipes, and signals for embedded systems
- Developed multithreaded applications and worked on protocol design and implementation for Bluetooth file transfer.
- Familiar with source control tools such as SVN and Git/GitHub for version management and collaboration.
- Proficient in analyzing business processes and translating them into technical designs to drive embedded application development.
- Implemented Linux hardening and security features for embedded devices to ensure system robustness.
- Experienced in cross-compilation for ARM architectures and device driver development including printer and I/O drivers.
- Worked on software architecture, design, and testing of real-time, multi-threaded embedded applications using C and Linux technologies.
- Developed Qt-based GUI applications using C++ and contributed to GSM connectivity daemons.
- Strong knowledge of embedded real-time operating systems (RTOS), synchronization, and memory management.
- Effective collaborator with cross-functional teams including hardware engineers, QA, and system architects to deliver production-ready solutions.
- Passionate about entrepreneurship and leveraging embedded technology expertise to build innovative products and startups.
- Excellent communication, teamwork, and problem-solving skills with a keen eagerness to learn and apply new technologies.

Skills

- Languages & Tools: C, C++, Python, VHDL, Linux, Git, Bash scripting
- Embedded Systems: Embedded Linux, Bootloader, Kernel Development, Root File System, OTA Updates
- Hardware: FPGA (Altera DE2-115), CAN, SPI, I2C, TI (Texas Instruments) platforms
- Machine Learning: Naive Bayes, Logistic Regression, SVM (Applied in Hardware Security Research)
- Software: Altera Quartus II, ModelSim

Education

Master of Science in Embedded Electrical and Computer Systems
San Francisco State University — December 2020

Bachelor of Engineering in Electronics and Communication
Anna University — September 2011 – May 2015

Professional Experience

Embedded Linux System Software Engineer
Lucid Motors | March 2022 – September 2024

- Led board bring-up, SDK packaging, and source code organization for efficient builds.
- Implemented and customized bootloaders, Linux kernel, and root file systems for diverse hardware setups.
- Developed the Surround View Computing Unit (SVCU) platform to enhance real-time camera interfacing and video processing.
- Designed and deployed an Over-the-Air (OTA) firmware update system.
- Supported QA with integration testing, kernel debugging, and I/O performance optimization.
- Collaborated closely with hardware, QA, and systems teams to ensure production readiness.

Design Verification Engineer (Contract – STEM OPT)
CloudBig Technology | March 2021 – February 2022

- Gained hands-on experience in design and verification engineering, aligned with academic background in Embedded Systems.
- Created verification environments and participated in pre-silicon functional verification at block, chip, and system levels.
- Contributed to CPU and graphics core verification using SystemVerilog and UVM methodologies.
- Designed and validated synthesizable RTL code, and supported performance modeling and post-silicon validation.
- Attended weekly reviews with the manager to assess progress and receive technical feedback.
- Strengthened skills in real-time debugging, verification tools, and design engineering best practices.

Software Engineering Intern
Kinetic Reality | October 2020 – December 2020

- Developed and tested motion detection algorithms for real-time embedded systems.
- Collaborated with the core engineering team to design and optimize motion-sensing software.
- Applied principles of signal processing to enhance motion tracking accuracy.

Research Assistant – Hardware Security Lab
San Francisco State University | June 2018 – August 2019

- Investigated the use of DRAM-PUF startup values for unique ID generation and assessed their security vulnerabilities.
- Applied machine learning algorithms to analyze ID resiliency.
- Presented findings at the 2018 International Green and Sustainable Computing Conference.
- Published paper in the 2019 SPIE Defense and Commercial Sensing Conference.
  Research Link

Teaching Assistant – Digital System Design Lab (ENGR-378)
San Francisco State University | January 2019 – June 2019

- Assisted students in hands-on labs with Altera DE2-115 FPGA boards and VHDL-based design.
- Supported the use of **Quartus II** and **ModelSim** for simulation and synthesis in Digital System Design coursework.

Embedded Systems Projects

Bluetooth Voice-Controlled Bot
Academic Project | https://adp-bot.webnode.com/

- Developed a voice-activated robotic car controlled via Bluetooth and Android voice commands.

EEG Eye-Blink Controlled Bot
Academic Project | https://nmi-project-ads.webnode.com/

- Created a bot controlled through eye blink signals detected via EEG sensors for accessibility applications.