Arjun Mehta

System Software Engineer | Embedded Systems | Linux Kernel Development
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PROFESSIONAL SUMMARY

Experienced System Software Engineer with 8+ years of expertise in **embedded systems**, **Linux kernel development**, and **real-time operating systems (RTOS)**. Skilled in **low-level programming**, **performance tuning**, and **hardware-software integration**. Adept at designing and optimizing **device drivers**, **memory management subsystems**, and **firmware** for high-performance embedded systems. Passionate about open-source contributions and integrating **Rust** for system-level development.

CORE COMPETENCIES

- **System Software**: Linux Kernel, Embedded Firmware, RTOS

- **Languages**: C, C++, Rust, Assembly (x86, ARM)

- **Performance Tuning**: Memory Management, Cache Optimization

- **Tools**: GDB, Valgrind, perf, strace

- **Version Control**: Git, Gerrit

- **Build Systems**: Yocto, CMake, Make

PROFESSIONAL EXPERIENCE

Senior System Software Engineer

Kronix Systems — Seattle, WA
January 2021 – Present

- Developed embedded Linux **memory management subsystems** and **kernel modules** for custom hardware.

- Designed and optimized **device drivers**, improving system stability and performance by 40%.

- Introduced **Rust-based firmware** to enhance safety and reduce crash rates by 35%.

- Led integration with **hardware teams** to ensure seamless **board bring-up**.

System Software Engineer

Pivora Technologies — San Jose, CA
July 2017 – December 2020

- Developed **networking stack components** for a custom Linux router OS, improving network throughput by 20%.

- Built firmware for **IoT devices** based on **ARM Cortex-M4 microcontrollers** and **FreeRTOS**.

- Assisted in performance diagnostics and system monitoring for embedded systems.

Freelance / Open Source Contributor

Ongoing (2018–Present)

- Contributed patches to the **Linux kernel**, focusing on **memory management** and **networking subsystems**.

- Developed **custom bootloaders** for **ARM-based embedded systems** and consulted on embedded projects.

EDUCATION

M.S. in Computer Engineering
University of Illinois Urbana-Champaign — 2017

- Focus: **Operating Systems**, **Real-Time Systems**, **Hardware-Software Integration**

- **Thesis**: "Optimizing Memory Management in Linux for Embedded Systems"

B.Tech in Electrical Engineering
Indian Institute of Technology (IIT) Bombay — 2015

- Focus: **Embedded Systems**, **Digital Logic Design**, **Microcontroller Programming**

TECHNICAL SKILLS

- **Languages**: C, C++, Rust, Assembly (x86, ARM)

- **Operating Systems**: Linux, FreeRTOS, QNX

- **Tools**: GDB, Valgrind, perf, strace

- **Version Control**: Git, Gerrit

- **Build Systems**: Yocto, CMake, Make

CERTIFICATIONS

- **Certified Embedded Systems Developer (CEED)**

- **Rust Programming for Embedded Systems – Udemy (2024)**

- **Linux Foundation LFCE (Certified Engineer)**

PROJECTS

Open Source Linux Kernel Contributions

- Contributed patches to **Linux kernel** to improve memory management and network performance.

Custom Bootloader for ARM Devices

- Developed a lightweight **bootloader** for **ARM-based embedded systems**.

IoT Firmware Development

- Developed **firmware** for **ARM Cortex-M4 microcontrollers** with **FreeRTOS** for IoT applications.

CLIENT PORTFOLIO

- **Sarah Lawson**, VP of Engineering — **Kronix Systems**

- **Michael Tan**, Senior Hardware Engineer — **Pivora Technologies**

- **John Davis**, CTO — **RedByte Corp.**

- **Jessica Wu**, Director of Systems Engineering — **NovaTech Solutions**

CONTACT INFORMATION

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