

UDAY KIRAN GANJI

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Professional Summary:

Embedded Software Engineer with a strong background in Linux kernel development, device drivers, and firmware programming on ARM Cortex-M platforms. Proficient in Embedded C, board bring-up, and interfacing peripherals like I2C, SPI, and UART. Experienced in Linux internals, kernel modules, bootloader customization, DTS, and cross-compilation. Well-versed with debugging tools such as Trace32, GDB, and version control using Git.

Work Experience:

Software Engineer-1 | Miraфра Software Technologies Pvt.Ltd. | Hyderabad , India

Client: Qualcomm India Pvt.Ltd.

May 2024 – Present

Project: Debugging Mobile Boot Process – Qualcomm India Pvt. Ltd.

Technologies Used: Trace32 (T32), PuTTY

Role: Embedded Engineer

Key Contributions:

- Debugged Qualcomm’s mobile boot sequence from power-on to UI across PBL, SBL, TZ, and UEFI stages.
- Performed step-by-step bootloader debugging using Trace32 by loading symbols and setting breakpoints.
- Analyzed serial logs via PuTTY to trace control flow and isolate issues across boot stages.

Key Projects:

Project-1: RTC Driver Integration in Linux Kernel

Technologies Used: Linux Kernel Development, I2C Bus, Device Tree Configuration, DS1307 RTC

Role: Embedded Engineer

Key Contributions:

- Integrated DS1307 RTC with the kernel over I2C by updating device tree and configuring pinmux.
- Modified and flashed the kernel image to enable RTC functionality in the system.
- Developed a user-space application for testing and resolved build-time issues during integration.

Project-2:Linux Kernel Upgrade for Qualcomm APQ8016

Technologies Used: Linux Kernel 4.11, Device Tree, Cross-Compilation, Qualcomm APQ8016

Role: Embedded Engineer

Key Contributions:

- Customized and upgraded the Linux kernel to version 4.11, porting DTS changes and enabling required drivers.
- Cross-compiled the kernel and generated bootable images for the target platform.
- Successfully deployed the upgraded kernel on Qualcomm APQ8016 and verified hardware functionality.

Project-3:Character Driver Basics on Linux

Technologies Used: Linux Kernel Modules, Character Drivers, File Operations

Key Contributions:

- Gained a good understanding of how Linux character drivers work.
- Explored basic driver development and user-space interaction through testing and log analysis.

Education:

Embedded Systems Certification, Kernel Masters, 2024 – Grade A

B.Tech – EEE, Sreenidhi Institute of Science & Technology, 2023 – 7.02 CGPA

Intermediate, Narayana Junior College, 2019 – 94.8%

ICSE, Hyderabad Public School, 2017 – 75%

Technical Skills:

- **Languages** : C-Programming,LSP
- **OS & Kernel** : Linux,Windows
- **Tools** : Keil, STM32CubeMX,Git,VS-Code
- **Build Tools** : Make, Cross-compilation
- **Debugging** : Ctags, Trace32, PuTTY, Log analysis,Gdb