

EMBEDDED LINUX PORTFOLIO — CHANDRASHEKHAR YARAGAMBALIMATH

Role Target: Embedded Software (Linux) – Mistral Solutions

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1. Linux Character Driver Demo – Virtual LED (Mini Project)

- Implemented a Linux character driver that creates /dev/virt_led.
- Supports open, write, release operations; toggles virtual LED state.
- Utilized printk() and validated behavior through dmesg logs.
- Demonstrated module loading/unloading using insmod and rmmod.

Skills: Linux Kernel Basics, Character Drivers, printk Debugging, Device File Communication.

2. Jetson Nano – STM32 Integration Architecture

- Designed UART protocol with handshake, ACK/NACK, CRC validation.
- Created STM32 drivers for UART, PWM, GPIO; integrated with Jetson Linux app.
- Established real-time sync for robotics control.
- Reduced latency & communication faults via structured packet handling.

Skills: Embedded C, Driver Development, Linux User-Space Integration, Real-Time Robotics.

3. U-Boot & Kernel Learning Summary

- Studied boot flow: ROM → SPL → U-Boot → Kernel → Init.
- Explored U-Boot commands, environment variables, device tree structure.
- Understood Linux filesystem, device nodes, dmesg/journalctl debugging.

4. Why I Fit the Mistral Embedded Linux Role

- Strong STM32 + Linux integration experience.
- Demonstrated initiative by building Linux kernel mini-projects.
- Fast learner with strong hands-on debugging and system design skills.