Kunal Raychandani

Electronics Engineer | Embedded Systems Developer
Electronics Engineer specializing in Embedded Systems, **Linux Kernel Development, U-Boot bootloader customization, and USB driver development**. Experienced in **kernel-to-userspace communication, low-level hardware interactions**, and **AI-powered ESP32 projects**. Skilled in **SDKs like NRF, Raspberry Pi Linux**, and various embedded platforms, focusing on firmware development and system optimization. Passionate about **real-time applications, driver development**, and **open-source contributions** in embedded systems.

📍 **Location:** [Bengaluru Karnataka,India]
📞 **Phone:** [+919510590609]
📧 **Email:** [Raychandanikunal@gmail.coml]
🌐 **Portfolio:** [Your Website/LinkedIn]

PROJECTS

ESP32 AI Voice Assistant

- Developed a **speech-to-text and text-to-speech** system using **Deepgram and ChatGPT APIs**.
- Integrated **real-time voice processing** on ESP32 for **AI-powered interactions**.
- Worked on **firmware optimization and low-latency audio streaming**.

Linux Kernel & U-Boot Customization

- Customized **U-Boot bootloader** for **Raspberry Pi**, enabling custom boot configurations.

- Developed **device drivers** and optimized **kernel-space to user-space communication**.
- Worked with **TFTP booting, NFS filesystem loading**, and **embedded Linux environments**.

USB Driver Development

- Designed and implemented a **custom USB driver** for **Linux-based embedded systems**.
- Developed **low-level firmware** to interface with **USB peripherals** and handle data transfer protocols.
- Debugged and optimized **driver performance** using **kernel logs and USB protocol analyzers**.

Embedded Systems & SDK Development

- Worked with **NRF SDK, Raspberry Pi Linux**, and **various embedded platforms** to build firmware solutions.
- Developed **real-time applications for IoT, AI, and sensor-based systems**.
- Experience with **PlatformIO, FreeRTOS**, and **low-power embedded designs**.

INTERNSHIP EXPERIENCE

Embedded Systems Intern

NXON AI PRIVATE LIMITED | **Nov 2024 – Mar 2025**

- Worked on **embedded AI solutions**, integrating **machine learning with edge computing**.
- Developed firmware for **real-time applications using ESP32 and Raspberry Pi**.
- Gained hands-on experience with **Linux kernel modules and driver development**.

Embedded Systems Training

Vector India | **Mar 2025 – Nov 2025**

- Hands-on training in **Linux kernel, device drivers, and real-time operating systems (RTOS)**.
- Worked on **low-level firmware development and hardware-software integration**.
- Built projects focusing on **microcontroller programming and embedded C development**.

EDUCATION

Bachelor of Engineering in Electronics & Communication

LJ University, Ahmedabad | 2022 – 2025

Diploma in Electronics & Communication Engineering

LJ Polytechnic, Ahmedabad | 2019 – 2022

TECHNICAL SKILLS

✅ **Embedded C, C++, Python**
✅ **Linux Kernel & Driver Development**
✅ **U-Boot Bootloader Customization**
✅ **ESP32, Raspberry Pi, NRF SDK**
✅ **Real-Time Operating Systems (RTOS, FreeRTOS)**
✅ **PCB Design & Circuit Debugging**
✅ **IoT & AI-based Embedded Solutions**

CERTIFICATIONS

📜 **Embedded Systems & RTOS Training – Vector India**
📜 **Advanced Linux Kernel Development – Online Course**
📜 **ESP32 IoT Development – Udemy**

LANGUAGES

- **English** – Proficient
- **Hindi** – Native
- **Gujarati** – Fluent
