



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]
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- 🌐 **Portfolio:** [<https://kunalraychandani.netlify.app>]

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**.
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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**.
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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
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CERTIFICATIONS

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

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