Udith S Nair

Bangalore, India
Bachelor of Technology
REVA University, Bangalore

+91-7338624905
udithsnair@gmail.com | udithh.me
GitHub Profile
LinkedIn Profile

Education

•B.Tech in Electronics and Computer Engineering *June 2027*
REVA University, Bangalore CGPA: 9.75

•Pre-University (PCMCs) *April 2023*
Jubilee PU College, Bangalore Grade: 93%

Experience

•Embedded Software Developer (Intern) *July 2025 - Nov 2025*
Crop Now Bengaluru, India

- Designed and developed embedded real-time software for autonomous rover systems, including FreeRTOS-based task scheduling, IPC, and synchronization.
- Contributed to kernel-level and low-level system development, along with system-level debugging and performance optimization across hardware–software interfaces.
- Implemented cloud communication pipelines and integrated ML components on embedded platforms for intelligent monitoring and decision-making.

•Google Cloud Lead *Present*
Google Developer Groups On-Campus

- Serving as a Mentor and Lead for Google Cloud Platform (GCP), guiding peers through cloud architecture and services.
- Obtained 21+ skill badges demonstrating proficiency in cloud infrastructure, data, and machine learning.

•Open Source Contributor *Oct 2025*
Hacktoberfest Remote

- Actively contributed to open-source software, with 4 Pull Requests (PRs) successfully merged.
- Collaborated with the global developer community to improve code quality, documentation, and feature implementation.

Projects

•Real-Time Airbag Deployment & Safety System
QNX Neutrino, FreeRTOS, Embedded C, STM32

- Benchmarked safety-critical deployment logic across **QNX** and **FreeRTOS** for millisecond-perfect determinism.
- Implemented **Rate Monotonic Scheduling** and POSIX threads to manage crash-detection interrupts and prevent priority inversion.
- Verified system "Safe States" and watchdog reliability using **Google Test** for simulated sensor failure scenarios.

•Edge-AI Traffic & Emergency Response System
Raspberry Pi, YOLOv11, Multi-threading, gRPC

- Deployed a dual-model **YOLOv11** pipeline on **Raspberry Pi** for real-time accident and emergency vehicle detection.
- Utilized **Multi-threading** to achieve high-throughput inference and automated email alerting on resource-constrained hardware.
- Architected a **Streamlit** dashboard with **gRPC** for low-latency telemetry visualization from edge to UI.

•WristArm Belt for Parkinson's Patients
Embedded C, Sensor Fusion, Wearable Electronics

- Developed a wearable system using **Sensor Fusion** to detect and filter pathological motor tremors in real-time.
- Optimized low-power firmware for continuous patient monitoring, aiding in early-stage diagnosis and rehabilitation.

Technical Skills and Interests

Languages: C, C++, Embedded C, Python, Embedded Python, Verilog, Java
Embedded & RTOS: QNX Neutrino, Zephyr RTOS, FreeRTOS, Linux (Advanced), POSIX Threads
Hardware & Platforms: STM32, Raspberry Pi, Jetson Nano, BeagleBoard, Arduino, ESP32
Tools & Frameworks: PlatformIO, Google Test (GTest), Bazel, gRPC, Docker, Git, Arduino IDE
EDA & Design: KiCad, DesignSpark PCB, Embedded Hardware Design, TinkerCAD
Areas of Interest: Safety-Critical Systems, Real-Time Systems, Edge AI, Automotive Firmware.

Honours & Awards

•3x Hackathon Winner : IEEE, Scaler School of Technology, REVA Univerity

•Top 10 Finalist & Best Battle-Bot Design : IARC, IIT Kanpur (International Autonomous Robotics Challenge)