

Udith S Nair

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Bachelor of Technology
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🐙 GitHub Profile

🌐 LinkedIn Profile

EDUCATION

•B.Tech in Electronics and Computer Engineering

REVA University, Bangalore

June 2027

CGPA: 9.75

•Pre-University (PCMCs)

Jubilee PU College, Bangalore

April 2023

Grade: 93%

EXPERIENCE

•Embedded Software Developer (Intern)

Crop Now

July 2025 - Nov 2025

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

Google Developer Groups

Present

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

Hacktoberfest

Oct 2025

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

•Smart Electrical SLD Source Feeder Extraction

YOLOv10, PaddleOCR, DeepLSD, PowSyBl, NetworkX

- Developed an extraction pipeline using **YOLOv10** and **PaddleOCR** to identify components and technical text from Single Line Diagrams (SLD).
- Utilized **DeepLSD** to vectorise wiring diagrams and built connectivity graphs using **NetworkX** and **PyPowsybl** (CIM Standards).
- Simulated extracted grid logic with LF Energy's **PowSyBl** framework to validate electrical connectivity and power flow.

•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.

TECHNICAL SKILLS AND INTERESTS

Languages: Python, C, C++, Java, Embedded C, MicroPython, SQL (Postgres), Verilog

Cloud & MLOps: GCP, AWS, Azure, Vertex AI, MLflow, DagsHub, BentoML, Docker, BigQuery

Data & AI: PyTorch, YOLO, Hugging Face, Power BI, Salesforce, NetworkX, PaddleOCR

Embedded & Tools: FreeRTOS, Linux, Git, GitHub, STM32, Raspberry Pi, PlatformIO, Bazel

Areas of Interest: Edge AI, MLOps, Computer Vision, Smart Grid Intelligence, Real-Time Systems.

HONOURS & AWARDS

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

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