

Rohan Lodhi

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EDUCATION

FLAME University

B.Sc. in Computer Science and Applied Mathematics

Pune, MH

Expected Apr 2026

- **Coursework:** Advanced Machine Learning, Software Architecture, NLP, Systems Programming, Formal Methods.

EXPERIENCE

Cybersecurity Intern

May 2025 – Jun 2025

DRDO (Defence R&D Organisation)

Hyderabad, IN

- Engineered a **VAPT pipeline** for Industrial Control Systems (ICS) utilizing Nmap and Recon-ng, successfully identifying vulnerabilities in air-gapped network simulations.
- Conducted threat modeling for OT infrastructure, focusing on anomaly detection within legacy industrial protocols.

Software Automation Intern

May 2024 – Aug 2024

CloudNeurons (Client: Model N)

Hyderabad, IN

- Architected a Python **ETL pipeline** to ingest and sanitize complex datasets (CSV, XLSX, PDF) into **MongoDB**, reducing manual data entry overhead by 40%.
- Built an interactive data visualization dashboard using **ReactJS** for real-time analytics.
- Automated enterprise communication workflows using **Tkinter** and COM interfaces.

Emerging Technologist / Fellow

Aug 2023 – Dec 2023

Millennium Fellowship (UN x MCN)

Pune, IN

- Co-developed a scalable climate-action platform using the MERN stack (**MongoDB, Express, React, Node**).

Research Assistant (Applied Mathematics)

Sept 2023 – Apr 2024

FLAME University

Pune, IN

- Modeled and visualized Partial Differential Equations (PDEs) using **Python, NumPy, and SciPy**.

PROJECTS

Bare-Metal Distributed ARM Hypervisor | *Rust, ARMv8-A, QEMU*

Jan 2026 – Present

- Developed a Type-1 hypervisor for ARMv8-A (EL2) enabling isolated workload partitions.
- Implemented EL2 exception handling and interrupt virtualization using GIC.
- Built distributed failover with heartbeat monitoring and leader election.

DiP-AST: Respiratory Sound Classification | *PyTorch, Transformers*

Oct 2025 – Dec 2025

- Developed a noise-robust ML architecture using **Audio Spectrogram Transformers (AST)**.
- Achieved high accuracy on the ICBHI dataset by implementing SpecAugment and Mixup strategies.

EmergencyMesh | *Android, Kotlin, BLE*

Aug 2024 – Dec 2024

- Built an offline-first decentralized messaging app for disaster zones with zero internet connectivity.
- Engineered a custom **BLE mesh protocol** using flooding algorithms for multi-hop delivery.

Meeting Intelligence Platform | *Next.js, FastAPI, Supabase*

Aug 2024 – Dec 2024

- Developed a full-stack SaaS platform that transcribes audio and extracts actionable tasks using LLMs.
- Implemented **Role-Based Access Control (RBAC)** and optimized vector search for transcripts.

Gofer WASM Interpreter | *C, WebAssembly, Emscripten*

Oct 2024 – Present

- Porting the Gofer functional language interpreter to run natively in the browser via **WebAssembly**.

TECHNICAL SKILLS

Languages: Python, Java, C/C++, JavaScript, SQL, x86 Assembly, HTML/CSS

Frameworks: React.js, Next.js, Node.js, FastAPI, Django, PyTorch

Tools: Git, Docker, Linux, MongoDB, Supabase, VS Code

Concepts: Data Structures, Systems Programming, OS Internals, OOP