

# Yash Patil

Location: Ulhasnagar, Maharashtra, India

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## EDUCATION

### University of Mumbai

**B.E. in Information Technology** with Honours in Cyber Security

CGPA (till sem 6): 9.09; IETE Student Forum Best Member '24-'25

K. C. College, Thane

Nov 2022 – June 2026

## EXPERIENCE

### Cyber Security Research Intern: Android Internals & Reverse Engineering

Feb 2025 – Present

Center of Excellence (CoE) in Complex and NonLinear Dynamic Systems (CNDS) - **VJTI**

- Worked with the researcher team to **enhance internal tooling** for reverse engineering and analysis of the **baseband processor** on Android
- Recreated **CVE-2021-25479** and **CVE-2021-25478** using the open-source **FirmWire** framework in an emulated environment, following documented workflows involving **fuzzing**, **system emulation**, and **static analysis** with Ghidra and IDA
- Developed a local cellular network test network using **SDR** and open-source stacks like srsRAN, OpenLTE, OpenBTS, YatesBTS, and OpenAirInterface
- Built APK static analysis scripts to automate reverse engineering workflows using **JadX** and **Ghidra**
- Researched the fundamentals of Android's **Binder IPC** mechanism and its associated vulnerabilities

## PROJECTS

### AirQualitySensor

ESP32 (C/C++), React (TS), Firebase, aWOT, ArduinoJson

[Source Code](#)

- Developed firmware with **ESP-IDF RTOS** in modular **C/C++**, implementing **watchdog handling**, **multicore task scheduling**, and task pinning with **aWOT** and **ArduinoJson** for REST APIs.
- Built a **React + TypeScript SPA** with Router and Firebase Realtime DB integration for real-time visualization.
- Enabled dual connectivity (LAN + Cloud) by syncing ESP and frontend with Firebase alongside local APIs.

### Datadash

Java, Python, C/C++, cryptography, GitHub CI/CD

[Source Code](#)

- Built a secure file transfer system with **AES-256 encryption** across **Android, Linux, Windows, and Python**.
- Implemented **socket-level programming** for direct file transfer with crash recovery and preference management.
- Created a **GitHub CI/CD pipeline** to automate compilation of Linux binaries and Windows executables; also contributed to the landing page backend.

### Other Projects:

- [OpenMedia](#) – Flask, SQLAlchemy, Bootstrap; microblogging platform with media uploads and privacy features.
- [Digital Encrypted Diary](#) – GnuPG + Python/Bash; CLI diary with Git-based sync and year-wise encrypted files.
- [ReadNexus](#) – Py/Flask + SBERT + Pandas + Bootstrap; full-stack book recommender with semantic search, collaborative filtering, and popularity-based suggestions.

## TECHNICAL SKILLS

**Languages** : Python, JavaScript/TypeScript, Java, C/C++, Bash

**Frameworks** : Django, Flask, React, Node.js, Express, SQLAlchemy, Mongoose, Bootstrap, REST APIs, JWT

**Tools** : Git, Docker, Azure, Postman, GDB, Ghidra/IDA, CLI, CI/CD, OpenAPI, GNU/Linux utilities

## CERTIFICATIONS AND ACHIEVEMENTS

- 1<sup>st</sup> – Debugging (Technotia, Kamaladevi) & Codesprint Codathon (GDSC, KC@2023) ; Dept. Topper (IT, 2023–24)
- 2<sup>nd</sup> – Reverse Coding (Technotia) ; 2<sup>nd</sup> – T915 Android Internals CTF (VJTI) ; 3<sup>rd</sup> – SIH Internal Hackathon (K.C. College)
- Virtual Internships via Eduskills: [CyberSecurity](#), [Android Developer](#), [Data Science Master](#), [Computer Networks](#)