

# 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

### ReadNexus

Python, Flask, SBERT, Pandas, Jinja, Bootstrap

[Source Code](#)

- Built a full-stack book recommendation system using **fuzzy searching**, summary based **semantic querying**, **collaborative filtering**, and popularity-based ranking
- Used **SBERT embeddings** + cosine similarity for query-based recommendations on a dataset of 3L+ books and 40K+ summaries
- Processed dataset of 300K+ Books; Implemented **mobile friendly**, responsive and interactive UI with **dark mode**

### SmartSpend

MERN Stack, JWT, Chart.js, Azure App Service

[Source Code](#)

- Designed and deployed a personal finance manager Web **SPA** with **investment** and **expense tracking**
- Implemented secure **JWT auth** with auto-renewal via **HTTPS cookies** and a SwaggerUI-documented REST API
- Used **Chart.js** for visual financial insights; deployed on **Azure App Service** with 99.9% uptime.

### 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.
- [AirQualitySensor](#) – ESP32 (C++) + TS + React/ChakraUI; real-time pollution monitoring with multiple sensors.

## 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, CLI, CI/CD, Swagger/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](#)