Yash Patil

Location: Ulhasnagar, Maharashtra, India

Personal Website | LinkedIn | GitHub | Email: yashpatil2k5@gmail.com |

EDUCATION

University of Mumbai   K. C. College, Thane
B.E. in *Information Technology* with Honours in Cyber Security   *Nov 2022 – June 2026*
CGPA (till sem 6): 9.09; IETE Student Forum Best Member '24-'25

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, CLI, CI/CD, Swagger/OpenAPI, GNU/Linux utilities

CERTIFICATIONS AND ACHIEVEMENTS

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