LAKSHIT VERMA

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SKILLS

Languages	Python, C/C++, JavaScript, TypeScript, Bash, HTML/CSS, LaTeX, SQL, Java
Frameworks & Libraries	Angular, FastAPI, Material UI, React, Next.js, PyQt, Node.js, Express.js, Tailwind CSS
Technologies	MongoDB, REST APIs, JSON, XLSForm, Git, Docker, Make/CMake
Cybersecurity	IDA Pro, Ghidra, Wireshark, Volatility, GDB, EnCase, BTRFS
Relevant Coursework	Computer Architecture, FPGA Design, Verilog, Microcontrollers, Embedded Systems
Management & Soft Skills	Leadership, Technical Management, Problem Solving, Communication, Teamwork, Training

TECHNICAL EXPERIENCE

Open Source Engineer *May 2025 – Present*
Dhwani RIS (via C4GT DMP) *Remote*

- Designed and implemented a **FastAPI-based backend parser** enabling **bulk conversion** of Excel-based survey forms (XLSForm) to mForm-compatible JSON, supporting forms with up to **400 questions per upload**.
- Achieved **batch processing speeds of 2.16 seconds** for 9 forms (≈**3,600 questions total**), with **per-question conversion latency averaging 0.15 ms** and **single-form save times of 240ms**.
- Built an **Angular frontend** for **real-time Excel uploads**, **live previews**, **error reporting**, and **batch operations**, integrated with **REST APIs** and **MongoDB** for seamless form lifecycle management.
- Conducted **comprehensive manual and automated QA**, validating JSON output against mForm templates and implementing **edge-case handling** to guarantee **reliability and future maintainability**.
- ⌂ [Source Code](#), [GitHub Issue #1](#)

Team Member *January 2024 – Present*
Cryptonite *Manipal, Karnataka, India · On-site*

- Extensively participated in **150+ Capture The Flag (CTF) competitions**, namely in **Forensics** and **Reverse Engineering**.
- Team achieved **#2 national ranking** in 2025 and **#3 national ranking** in 2024 on ctftime.org, competing against 200+ teams across India in prestigious competitions like **BSides Bangalore CTF**, **IIT BHU's Kashi CTF**, and **NahamCon CTF**.
- **Designed and developed 2 original CTF challenges** for [niteCTF 2024](#): a **Minecraft protocol analysis challenge** requiring **packet parsing** and **3D coordinate extraction** and an **8-bit VM challenge** with **NOR gate-based XOR encryption** that tested participants' skills in **virtual machine analysis** and **logic gate reverse engineering**.
- **Lead 20+ Junior Members** in the development and execution of the team's **OASIS CTF**, an intra-college entry-level cybersecurity competition that attracted **499 participants across 218 teams**, including challenge creation, infrastructure setup, and real-time technical support during the 24-hour event.

Core Committee Member *November 2023 – October 2024*
Manipal University ACM Chapter *Manipal, Karnataka, India · Hybrid*

- **Co-organized Classified ML workshop** with **100+ participants**, handling **dataset curation** and **technical support**.
- **Curated datasets** for **Epoch 2024 ML competition** with **100+ entries**, ensuring **data quality** across multiple domains.

ACHIEVEMENTS

- **Recieved 1st Position and 1,00,000 INR** in the [**Smart India Hackathon 2024**](#), under PS 1749.
- **Recieved 1st Position and 25,000 INR** in the GITxIITB CTF organized by KLS GIT, Belagavi and IIT Bombay Trust Lab.
- **Recieved 2nd Position and 10,000 INR** in the SoftLaunch Hackathon organized by the MIT Innovation Centre.

PROJECTS

- **NiteWatch** *Python, PyQT, BTRFS, XFS, EnCase, DFIR, Blue Teaming*
  - **Parsed XFS and BTRFS** file systems **from scratch** using **no external libraries** for low-level data recovery.
  - Built **intuitive PyQt frontend** for **easy visual analysis** and **user-friendly file system exploration**.
  - Integrated **AI analysis** for **DFIR-relevant insights** and **automated threat detection**.
- **YatraGPT** ⌂ [vee1e/finova](#) *React, Gemini API, Typescript, NextJS*
  - Built an **AI travel assistant** using **Gemini API** for **trip planning** with **real-time recommendations**.
  - Integrated **IRCTC API** for **train ticket search** and implemented **backtracking algorithm** for **optimal route finding**.
  - Deployed on **Vercel** with **TypeScript** and **Next.js** for **scalable performance** and **modern web standards**.

EDUCATION

Manipal Institute of Technology, Manipal, Karnataka *July 2023 – August 2027*
Bachelor of Technology — Electronics Engineering (VLSI Design & Technology)

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