LAKSHIT VERMA

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SKILLS

Languages	Python, C/C++, JavaScript, TypeScript, Bash, HTML/CSS, LaTeX, SQL
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
Relevant Coursework	Computer Architecture, FPGA Design, Verilog, Microcontrollers, Embedded Systems
Cybersecurity	IDA Pro, Ghidra, Wireshark, Volatility, GDB, EnCase, Sleuthkit, FTK Imager, Btrfs
Management & Soft Skills	Leadership, Technical Management, Problem Solving, Communication, Teamwork, Training

TECHNICAL EXPERIENCE

Student Software Developer, Dhwani RIS *May 2025 – August 2025*
Code for GovTech DMP *Remote*

- Designed and implemented a FastAPI-based backend parser from scratch enabling bulk conversion of Excel-based survey forms through XLSForm to mForm-compatible JSON, supporting forms with up to 400+ questions per upload.
- Built an Angular frontend from scratch for real-time asynchronous Excel uploads, live previews, inline error reporting, and batch operations, integrated with REST APIs and MongoDB for seamless form lifecycle management.
- 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.
- Created comprehensive automated testing scripts and CI/CD pipelines, validating JSON output against mForm templates and implementing edge-case handling for both frontend and backend.
- Links: **Source Code**, **GitHub Issue**

Digital Forensics Head *January 2024 – Present*
Team Cryptonite — Major Student Project *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 10,000+ teams worldwide 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 36-hour event.

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

- Co-organized the "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

- Awarded **#1 Position** and **1,00,000 INR** in the Smart India Hackathon 2024, under PS 1749.
- Awarded **#1 Position** and **25,000 INR** in the GITxIITB CTF by KLS GIT, Belagavi & IIT Bombay Trust Lab.
- Awarded **#1 Position** and **15,000 INR** in the KJSSE CTF by KJ Somaiya College of Engineering, Mumbai.
- Awarded **#2 Position** and **10,000 INR** in the SoftLaunch Hackathon by the MAHE Innovation Centre. **(Team Leader)**
- Awarded **#1 Position** and **5,000 INR** in the Nova Genesis Hackathon by the MIT Astronomy Club. **(Team Leader)**

PROJECTS

NiteWatch *Python, PyQT, Btrfs, XFS, EnCase, DFIR, Blue Teaming, Operating Systems*

- A DFIR application built for Btrfs and XFS filesystems, capable of restoring deleted files along with their complete metadata.
- Parses filesystem data structures including B+ trees, inode records and superblocks, recovering both deleted and active files.
- Provides a PyQt-based graphical interface to efficiently navigate, visualize, and interact with reconstructed file system structures.

Astraeus — Source Code *Python, PyTorch, Three.js, XGBoost*

- An ensemble ML application pipeline combined with LSTM/GRU networks for high-accuracy trajectory and collision assessment.
- Provides real-time ingestion and preprocessing of Celestrak TLE data with feature engineering on orbital elements.
- Implements and end-to-end system delivering 100ms inference latency, continuous risk monitoring, and 3D viz. of orbital dynamics.

EDUCATION

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

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