ASHUTOSH SATPATHY

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SUMMARY

Computer Science undergraduate specializing in Cybersecurity and Machine Learning, with experience developing ML-based ransomware detection systems, retinal image segmentation models, and time-series prediction pipelines. Proficient in Python, Java, C++, SQL, and cybersecurity tools including Wireshark, Nmap, Metasploit, and Kali Linux. Demonstrated ability to build, evaluate, and deploy data-driven models on large-scale datasets.

TECHNICAL SKILLS

- **Programming Languages:** C++, Python, Java
- **Web Technologies:** HTML, CSS
- **Cybersecurity Tools:** Wireshark, Nmap, Metasploit, Kali Linux
- **Databases:** MySQL, MongoDB
- **Platforms:** AWS, Kaggle
- **Computer Science Fundamentals:** Data Structures and Algorithms, Object-Oriented Programming, DBMS

ACHIEVEMENTS

- Co-inventor of a **patented 360° air-cooler** blade technology (2024), focused on airflow optimization and energy efficiency improvements.
- Solved **150+ algorithmic problems** on LeetCode covering arrays, trees, graphs, and DP.
- Selected participant in national-level hackathons organized by **HP and EY India**.

CERTIFICATIONS

- Generative AI Using IBM Watsonx
- Cyber Security Analyst
- The Bits and Bytes of Computer Networking (Google)

LEADERSHIP & RESPONSIBILITIES

Technical Contributor

Gen AI Club

Aug 2022 – Jan 2023

- entored 20+ junior students in AI and cloud fundamentals through hands-on learning sessions, improving concept understanding and practical adoption.

Core Organizer

Cyber Defense Warriors Club

Dec 2023 – Mar 2024

- Organized 3+ cloud-focused technical workshops with 100+ total participants, coordinating logistics, speaker sessions, and event execution.

EDUCATION

B.Tech (CSE) – 8.55 CGPA

Vellore Institute of Technology, Bhopal

2022 – 2026 | Bhopal, M.P

Secondary School – 90.8%

Kendriya Vidyalaya AFS Avadi

2019 – 2020 | Chennai, T.N

PROJECTS

Retinal Image Segmentation

Jun 2023 – Aug 2023

- Developed a deep learning model using a modified U-Net architecture for pixel-level retinal vessel segmentation on 2,000+ image patches.
- Achieved AUC scores of 0.98 (DRIVE) and 0.97 (STARE), outperforming 5+ benchmark models.
- Reduced manual diagnostic workload by 30% through automated vessel detection.

VANET Ransomware Detection

Aug 2024 – Sep 2024

- Designed a real-time ML-based ransomware detection system for Vehicular Ad Hoc Networks (VANETs).
- Achieved 95%+ detection accuracy with <3% false-positive rate under dynamic network conditions.
- Processed high-volume VANET traffic with sub-second inference latency (<500 ms).

Stock Market Trend Prediction

May 2025

- Built a time-series ML model to predict next-day market direction (UP/DOWN) using 100,000+ historical stock records.
- Engineered 10+ technical indicators (moving averages, volume-based features) with strict chronological train-test splitting to prevent data leakage.
- Implemented an end-to-end ML pipeline, achieving consistent trend classification performance across multiple markets.