ASHUTOSH SATPATHY

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SUMMARY

Aspiring cybersecurity professional pursuing a B.Tech in Computer Science with hands-on experience in machine learning, network security, and intrusion detection systems. Skilled in Python, Java, SQL, and cybersecurity tools including Wireshark, Nmap, Metasploit, and Kali Linux. Developed ML-based ransomware detection systems and medical image segmentation models with proven performance on large-scale datasets. Seeking an entry-level role to apply data-driven security solutions and strengthen organizational cyber defense.

EDUCATION

Vellore Institute of Technology, Bhopal	2022-2026
Bachelor of Technology - Computer Science and Engineering	8.52/10 CGPA
CBSE Board Class XII Kendriya Vidyalaya	2021-2022
CBSE Board Class X Kendriya Vidyalaya	2019-2020

CERTIFICATES AND ACHIEVEMENTS

- Patent — Apr 2024
  Patented a groundbreaking 360-degree air cooler design, significantly boosting cooling efficiency with innovative technology and energy efficiency
- The Bits and Bytes of Computer Networking, Google — Dec 2024
- Cyber Security Analyst from IBM Career Education Program — Apr 2025
- GEN AI Using IBM Watsonx from IBM Career Education Program — Apr 2025

PROJECTS

Retinal Image Segmentation   Source Code
- *Developed a deep learning model using a modified U-Net architecture, achieving pixel-level vessel segmentation accuracy across 2,000+ image patches.*
- *Achieved 0.98 AUC on the DRIVE dataset and 0.97 AUC on STARE, outperforming 5+ existing benchmark methods.*
- *Applied data augmentation and preprocessing pipelines, reducing overfitting by ~15% and improving generalization.*
- *Enabled early detection of retinal disorders (diabetic retinopathy, glaucoma), potentially reducing manual diagnostic effort by ~30%.*

VANET Ransomware detection system   Source Code
- *Designed and implemented a real-time ML-based ransomware detection system securing communication in Vehicular Ad Hoc Networks (VANETs).*
- *Achieved 95%+ detection accuracy with a false-positive rate below 3% across highly variable vehicular network conditions.*
- Processed high-volume VANET traffic streams with sub-second inference latency (<500 ms) for immediate attack mitigation.
- Evaluated performance across multiple simulated smart-mobility scenarios using Kaggle cyber-traffic datasets, demonstrating scalability for smart-city deployment.

Stock Market Trend Prediction Using Machine Learning   Source Code
- *Built a time-series ML model to predict next-day market direction (UP/DOWN) using 100,000+ historical stock records from Kaggle.*
- 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 (feature scaling + Logistic Regression), achieving consistent trend-classification performance across multiple markets.
- Improved model robustness by adopting trend-based prediction instead of raw price forecasting, aligning with real-world financial analysis practices.

SKILLS

Programming languages: C++, Java, Python
Backend: Node.js, Express.js
Frontend: HTML, CSS
Databases: MongoDB, MySQL
Languages: English, Hindi, Tamil
Cyber Security: Wireshark, Nmap, Metasploit, Kali Linux