

Ketan Dav

Security & Systems Engineer

India | ketandav.cs@gmail.com | +91-6355772342
[GitHub](#) | [LinkedIn](#) | [Portfolio](#)

Professional Summary

Computer Science undergraduate with strong foundations in systems, networks, and secure infrastructure design. Experienced in building AI-assisted security systems and backend architectures. Interested in security engineering, cloud infrastructure, and scalable system development.

Education

B.Tech in Computer Science & Engineering 2023 – Present
Nirma University, Ahmedabad

Relevant Coursework: Data Structures & Algorithms, Operating Systems, Computer Networks, Database Systems

Projects

AI-Based Next Generation Firewall (NGFW) 2025
Smart India Hackathon – Top 5 National Finalist
[GitHub](#)

- Built a production-style AI-driven NGFW operating inline using Linux raw sockets.
- Implemented stateful flow reconstruction and early-flow ML classification for real-time threat detection.
- Integrated encrypted traffic fingerprinting (JA3) and Suricata IDS for enhanced detection capabilities.
- Designed automated SOAR-based containment workflows.
- Developed a real-time dashboard and scalable modular architecture tested in GNS3.

AI-Driven Intrusion Detection System (IDS) 2025
[GitHub](#)

- Designed and implemented an AI-based IDS for real-time network threat monitoring.
- Configured switch port mirroring (SPAN) for packet inspection and traffic analysis.
- Performed feature extraction and ML-based attack classification (DDoS, PortScan).
- Implemented risk-based alert generation aligned with secure system design principles.

Network Management System (Concept Prototype)

- Designed backend architecture for real-time monitoring and fault detection.
- Developed automated remediation workflows to reduce manual network operations.
- Focused on modular, scalable, and security-aware system design.

Technical Skills

Languages: Python, C, JavaScript, SQL

Security: Network Security, Intrusion Detection, Traffic Analysis, Secure Architecture Design

Cloud & DevOps: AWS (EC2 deployment, S3, IAM, VPC basics), Docker, Linux Server Management

Full-Stack: MongoDB, Express.js, React.js, Node.js (MERN)

Core Concepts: DSA, OS, CN, DBMS, System Design Fundamentals

Achievements

- Smart India Hackathon – Top 5 National Finalist.
- Ranked Top 7% globally on TryHackMe.
- Organized CTF competitions and technical workshops.

Leadership

Vice President, Cybersecurity Club – Nirma University

2024 – Present

- Organized technical events and CTF competitions.
- Mentored students in security fundamentals and systems thinking.