

Varun Hegde

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EDUCATION

RNS Institute of Technology

Bachelor of Engineering in Computer Science (Cybersecurity)

SGPA: 8.4/10

Bangalore, KA

2022 – Present

PROJECTS

Zerodha-Integrated Trading Assistant with RAG Intelligence

LangChain, FastAPI, FAISS, OpenRouter API, Zerodha Kite API

- Built a web-based trading assistant supporting **automated trade execution** on the **Zerodha Kite API**.
- Implemented backend with **LangChain**, **HuggingFace embeddings**, and **FAISS** for semantic retrieval.
- Integrated real-time stock data and trading workflows using **Yahoo Finance** and **Zerodha Kite APIs**.
- Developed a responsive **front-end** for chat, PDF uploads, and document management.

Automated Smoke Detector Placement System

Computer Vision, OpenCV, Spatial Analysis

- Built an automated tool that analyzes 2D floor plans to determine optimal smoke detector locations.
- Implemented room segmentation and valid-area extraction using **OpenCV** and **distance-transform based optimization**.
- Generated annotated outputs marking detector positions for complete and standards-aligned coverage.

Automated Threat Hunting & Real-Time Network Analyzer

Network Security, Machine Learning, Packet Analysis

- Built a real-time network monitor with **Scapy**, capturing traffic and extracting detailed **protocol features**.
- Integrated **rule-based detection** for **SYN floods**, **ICMP floods**, and **port scans**, with automated IP blocking.
- Trained and tested **machine learning models** to detect complex attack patterns.

TECHNICAL SKILLS

Languages: Python, JavaScript, C, C++

Machine Learning & Data Science: TensorFlow, BeautifulSoup, Scikit-learn, pandas, NumPy, SQL

AI Tools: LangChain, LMStudio, Ollama, n8n

Cybersecurity Tools: Kali Linux, Portswigger, Wireshark, Nmap

DevOps: Docker, Git, Github

CERTIFICATIONS

Cisco Certified Support Technician Cybersecurity

Issued: Dec 2024

Cisco

Network Defense

Issued: Oct 2025

Cisco NetAcad

Data Analytics Essentials

Issued: Mar 2025

Cisco NetAcad

PUBLICATIONS

Exploiting Vulnerabilities via Keystroke Injections

Published: Dec 12, 2024

IJARCCE

- Explored vulnerabilities using **Digispark** for ethical penetration testing.
- Analyzed **keystroke injection** techniques for security assessments.
- Highlighted risks and cyber-security enhancements.