

# Varun Hegde

+91 75882 72422 | [varunhegde13@gmail.com](mailto:varunhegde13@gmail.com) | [linkedin.com/in/varun-hegde2864](https://linkedin.com/in/varun-hegde2864) | [github.com/varun2864](https://github.com/varun2864)

## 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

Cisco

*Issued: Dec 2024*

### Network Defense

Cisco NetAcad

*Issued: Oct 2025*

### Data Analytics Essentials

Cisco NetAcad

*Issued: Mar 2025*

## PUBLICATIONS

### Exploiting Vulnerabilities via Keystroke Injections

IJARCCE

*Published: Dec 12, 2024*

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