FAHEEM TANVEER

Computer Science Engineer · Cybersecurity & Connected Systems

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Professional Summary

Third-year Computer Science Engineering student at PES University, Bangalore, specialising in Cybersecurity and Connected Systems. Hands-on experience across network security, blockchain development, cloud infrastructure, machine learning, and full-stack development — from raw socket protocol implementation and cryptographic analysis to containerised cloud deployments and React-based frontends. Seeking an internship to apply technical depth in a real-world engineering environment.

Education

PES University, Bangalore

B.Tech in Computer Science and Engineering

Specialisation: Cybersecurity & Connected Systems

Expected Graduation: 2027

Internship Experience

Frontend Developer Intern — Shoob House *Bangalore, India*

Startup · Frontend Development

- Developed and shipped UI components for the company's web platform using React, improving user-facing feature delivery.
- Collaborated with the product team to translate design mockups into responsive, production-ready interfaces.
- Participated in code reviews and maintained component libraries to ensure consistency across the application.

Projects

Hybrid RL–Probabilistic Solver (Hackman Project)
Python · PyTorch · Hidden Markov Models · Deep Q-Network (DQN)

- Implemented a dual-engine solver combining Hidden Markov Models for probabilistic sequence modelling with a Deep Q-Network for strategic decision-making.
- Demonstrated combining classical statistical models with modern RL to efficiently prune search space in sequence prediction.

Packet Manipulation & Protocol Exploitation *Scapy · Wireshark · Linux · Python*

- Crafted raw DNS query packets using Scapy to perform IP spoofing, manually constructing headers to bypass standard network filters.
- Implemented and broke a Hill Cipher system, demonstrating applied modular arithmetic and matrix inversion in cryptanalysis.

Lightweight Network Protocol Implementations
Raw Sockets · Python · HTTP · DNS · DHCP · MQTT

- Implemented HTTP, DNS, DHCP, and MQTT protocols from scratch using raw sockets, following RFC-level specifications for packet structure and communication flow.

Containerised Microservices & Distributed Chat App
Docker · Docker Compose · Kubernetes · RabbitMQ

- Built a distributed chat application using RabbitMQ for asynchronous inter-service communication with Docker volumes for data persistence.
- Orchestrated multi-container deployment using Kubernetes for high availability and scalability.

AWS Multi-Tier Network Architecture
AWS · VPC · EC2 · NAT Gateway · Security Groups · IAM

- Architected and deployed a multi-tier AWS environment with public/private subnets, NAT gateways, and EC2 instances configured with security groups for network isolation.

Blockchain Development (Truffle + Docker)
Solidity · Truffle · Docker · Smart Contracts

- Set up a private multi-node blockchain environment using Docker, deployed and tested smart contracts via the Truffle framework.

Hostel Management System
React · Python · SQL · DBMS

- Built a full-stack hostel management application supporting room allocation, complaint submission, and feedback tracking.

Technical Skills

Languages: Python, JavaScript, Solidity, SQL, C
Security & Networks: Scapy, Wireshark, IP Spoofing, Cryptanalysis, TCP/IP, DNS, DHCP, MQTT
Cloud & DevOps: AWS (VPC, EC2, NAT, IAM), Docker, Kubernetes, RabbitMQ, Vercel, Supabase
Blockchain: Solidity, Truffle, Smart Contracts, Multi-node Setup
ML / AI: PyTorch, HMM, DQN, CNNs, Transformers, Multimodal Fusion, XAI
Web & Databases: React, Python (Flask/backend), PostgreSQL, Supabase, PythonAnywhere

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Coursework Highlights

Data Structures & Algorithms · Operating Systems · Computer Networks · DBMS · Applied Cryptography · Computer Network Security · Blockchain Technology · Mobile Autonomous Robotics · Cloud Computing · Machine Learning