Kushagra Dwivedi

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Education

Vellore Institute Of Technology, Bhopal *2021-2026*

Integrated Masters of Tech in Computer Science with specialization in Cyber Security

Projects

Real-Time Social Media Analytics Platform | github.com *June '25*

- Built a full-stack microservices platform to analyze social media posts in real time (~500 posts/min).
- Developed a responsive React frontend with dynamic post feeds, filters, and API integration.
- Implemented JWT-authenticated user system using Slim PHP and MariaDB with optimized SQL schema.
- Created a high-throughput post service in Node.js using Express and Cassandra for NoSQL ingestion.
- Designed RESTful APIs with UUID-based routing; tested endpoints via Postman and CI pipelines.
- Dockerized all services for modular deployment; ensured fault tolerance and service isolation.

Minimal HTTP server from scratch in C | github.com *May '25*

- Built an HTTP/1.0 and 1.1 server in C using raw sockets, supporting GET/POST requests and static file serving.
- Handled up to 50 concurrent clients using multithreading (POSIX pthreads); optimized response time to ~150ms.
- Added MIME type resolution, manual memory management, and request logging for robustness and performance.

Active Directory Deployment *September '24*

- Deployed Windows Server 2019 AD DS with a Windows 10 client in a virtualized lab using VMware & VirtualBox.
- Implemented DHCP, RAS/NAT, and domain policies to simulate enterprise network authentication.
- Facilitated user/group management and network security testing in an Active Directory setup.

AWS Hacking Lab *August '24*

- Developed an AWS-based penetration testing lab, reducing setup time by 80% with Terraform & AWS CLI.
- Conducted network forensics and exploit testing using Kali Linux, Nmap, and Metasploit.

Work Experience

Frontend Developer & UI/UX Designer – Cashin.club *2023-2024*

- Spearheaded the design and development of the frontend for a high-traffic credit card marketplace, enhancing user experience and driving increased user engagement.
- Collaborated cross-functionally in product ideation, playing a key role in defining core features, user flows, and interface interactions to align with business goals and customer needs.

Courses & Certifications

- NPTEL-Blockchain and its applications
- IIT Bombay TechFest Ethical Hacking
- Google cybersecurity professional
- Advent of Cyber 2024 (TryHackMe)

Skills

C, Python, Javascript, Typescript, React.js, JSON, Django, Linux, TCP/IP, SQL, AWS, SSH, Git, WSL2, Kali Linux Tools, Docker, HTML, CSS, UNIX