

# Sanskriti Tyagi

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Final-year CSE student with hands-on experience building backend and full-stack applications using Python, C++, Node.js, and AWS. Worked on performance-focused systems including caching and search, with exposure to load testing, CI/CD, and cloud deployments. Strong fundamentals in DSA, databases, and core computer science.

## Education

### Vellore Institute of Technology, India

2022 – 2026

B.Tech in Computer Science & Engineering (CSE) | CGPA: 8.48/10

Relevant Coursework: DSA, OS, DBMS, OOP, Computer Networks, Distributed Systems, Cloud Computing

## Key Skills

**Programming:** Python, C++, JavaScript

**Backend:** Node.js, Express, REST APIs

**Databases:** PostgreSQL, MongoDB, SQL, SQLAlchemy

**Cloud:** AWS (EC2, S3), Docker, Git Actions(CI/CD)

**AI & Search:** OpenAI API, embeddings-based semantic search

**Tools:** Git, VS Code, Streamlit, Load Testing (k6, JMeter)

## Selected Projects

### ⌚ Distributed Cache System | Node.js, Docker, AWS EC2, k6

Nov 2025

- Designed and implemented a distributed in-memory cache to reduce database reads under concurrent traffic, using request sharding with LRU and TTL-based eviction.
- Load-tested the system using k6, identified routing and async request-handling bottlenecks, and sustained ~6K requests/sec on an EC2 instance with stable latency under load.
- Simulated cache node failures and analyzed basic health checks and traffic rerouting to evaluate system behavior and minimize request loss during failure scenarios.

### ⌚ Time Travelers Archive | React, Node.js, MongoDB, AWS EC2, OpenAI API, GitHub Actions

Jan 2025

- Built a document search service to explore semantic retrieval using vector embeddings, indexing 5K+ documents and supporting keyword and similarity-based queries.
- Identified slow query paths during search requests and improved average API latency by ~20% through schema restructuring and query-level optimizations.
- Added authentication and automated backend deployment using JWT and GitHub Actions, deploying updates to AWS EC2 to reduce manual release errors.

### ⌚ LeetCode Practice Tracker | Python, SQLAlchemy, PostgreSQL, Streamlit

Oct 2024

- Built a personal analytics dashboard to track problem-solving attempts, accuracy trends, and difficulty distribution over time.
- Optimized database queries and indexing during migration to AWS RDS PostgreSQL, achieving ~30% lower query latency.
- Directed rule-based insights to identify weak topics using historical attempt data.

## Achievements

- Secured 2nd place among 50+ teams in a hackathon for an ML-based rockfall prediction project.
- Solved 250+ DSA problems across LeetCode, GFG, and CodeChef.

## Certifications

- SMARTBRIDGE: MERN Full Stack Developer
- IBM: GenAI using Watsonx
- IIT Kharagpur (NPTEL): Cloud Computing (Elite, Top 5%)
- Google: Computer Networking (Coursera)

## Leadership & Extracurricular

### Fintech Club | Social Media Team Lead

Jan 2024 – Present

- Increased engagement by 50% by tracking post-level metrics and iterating on content strategy.
- Led university events with 150–200+ participants and secured Rs. 50,000 in sponsorships.