Athrv Mittal

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EDUCATION

VIT Bhopal University	Bhopal, India
B.Tech in Computer Science — CGPA: 8.69	*Aug. 2022 – May 2026*
Sacred Heart Senior Secondary School	Punjab, India
CBSE (Class XII), Aggregate: 82.8%	*2021 – 2022*
Sacred Heart Senior Secondary School	Punjab, India
CBSE (Class X), Aggregate: 88.5%	*2019 – 2020*

TECHNICAL SKILLS

Languages & Tools: C++,Python, JavaScript, HTML, CSS, SQL, Git, VS Code
Frameworks & Technologies: React, Node.js, Express.js, Tailwind CSS, WebSockets
Databases & CS Fundamentals: MongoDB, MySQL, Data Structures and Algorithms

PROJECTS

Efficient Flight Itinerary Optimizer Aug 2024 – Nov 2024
- Developed multi-criteria flight planner using BFS & Dijkstra for optimized routes by connections, cost and time.
- Modeled real-world constraints (20-min layovers, $\leq$100 flights/city) with $O(m)$ & $O(m \log m)$ efficiency.
- Achieved less than 50ms latency via optimized graph adjacency lists and heap queues for instant route generation.
- Orchestrated scalable solution handling 10k+ flights for real-time travel planning rivaling commercial systems.

Heap-Based Distributed Task Scheduler Aug 2024 – Nov 2024
- Engineered min-heap load-balancer dynamically assigning treasures (tasks) to least-loaded crewmates (workers).
- Implemented max-heap urgency-first task processing per crewmate, reducing average completion time by 32%.
- Achieved $O(\log M)$ assignment and $O(\log K)$ processing per treasure, ensuring robust algorithmic efficiency.
- Scaled system to handle 10k+ tasks via lazy completion and optimized structures, ensuring real-time processing.

Digital Library System Jan 2024 – Apr 2024
- Built a Python-based digital library with custom HashMap/Set, boosting keyword lookup performance by 50%.
- Designed bespoke hash functions to reduce average search response times by 30%.
- Applied adaptive data-structure allocation on high-traffic nodes, cutting latency by 18ms under load.
- Managed dynamic resource provisioning at peak, reducing server utilization by 22%.

Vercel-Style Cloud Deployment Platform Jan 2025
- Implemented cloud deployment platform with 3 core services: Upload, Deployment, and Request Handler.
- Engineered async workflows via Redis queues & S3 storage for GitHub cloning, secure builds and static hosting.
- Developed Node.js backend in Express, simple-git, Redis for deployment lifecycle and status tracking.
- Built React frontend for repo submission, deployment status polling, and post-build URL generation.
- Reduced build-trigger times to under 10s by optimizing repo cloning, builds, and static asset delivery.

SCHOLASTIC ACHIEVEMENTS

Competitive Programming: Achieved a 1400+ rating on Codeforces (Specialist) and 1750+ on LeetCode (Top 10% globally), demonstrating strong algorithmic thinking and consistency.

DSA Proficiency: Solved 1000+ problems across LeetCode, Codeforces, and GFG, showcasing commitment to problem-solving and technical mastery.

EXTRA CURRICULAR ACTIVITIES

- **GSoc Club – VIT Bhopal** (Jan 2025 – Present):
  Founding Member and Technical Lead — mentored 50+ members in programming and led development initiatives, contributing to a 30% rise in active engagement and successful execution of 3 large-scale hackathons.

- **Sports**: Actively participate in badminton and long-distance marathons, fostering resilience, focus, and physical discipline.