

Ayush Vishwakarma

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EDUCATION

Bachelor of Technology (B.Tech)

Oct 2022 - Expected 2026

Vellore Institute of Technology

CGPA: 8.76/10

Relevant Coursework: Data Structure, Algorithms, Database Management Systems, Operating Systems, Computer Networks, Object Oriented Programming (OOPs/OOP), Software Engineering, Web Technologies.

SKILLS

Languages: C++, JavaScript (ES6+), TypeScript, SQL, Python

Frontend: ReactJS, TailwindCSS, HTML5/CSS3

Backend: Express.js, Node.js, RESTful APIs, WebSocket, FastAPI

Databases & Caching: MongoDB, MySQL, SQLite, Redis

DevOps & Cloud: Docker, AWS (EC2, S3), Git, Linux

WORK EXPERIENCE

Full Stack Development Intern

Aug 2025 – Sep 2025

Wise Mango Inc.

India

- Developed a full-stack **Community Module** with React, Node.js, and MongoDB, refactored 8+ community engagement modules (polls, likes, threading), resulting in a reduction of code redundancy and improved maintainability.
- Engineered RESTful APIs for 5 core entities, enforcing data integrity via strict schema validation and securing endpoints with Role-Based Access Control (RBAC) using JWTs, and scalable media uploads using **Multer + GridFS**.
- Engaged in an Agile development process, collaborating with the team to provide solutions that led to more efficient development cycles.

PROJECTS

Scalable Flight Commerce | React, Node.js, Express, MongoDB, Stripe [↗](#)

- Engineered a full-stack flight booking platform with real-time flight data via **RapidAPI**, flexible search/filters, and deployed on Vercel with **CI/CD** and global CDN caching.
- Implemented idempotent payment processing with **Stripe** Webhooks to handle network failures and prevent duplicate transactions.
- Optimized frontend performance via code-splitting, **lazy loading**, and **image compression**, achieving Lighthouse 94 (Performance), 91 (SEO), 95+ (Accessibility & Best Practices).
- Constructed a responsive, mobile-first UI in React + TypeScript with semantic HTML and keyboard navigation, ensuring inclusive access for all user personas.

Covert Data Embedding System | Canvas API, React, Steganography, TypeScript [↗](#)

- Developed a responsive, glass-morphism UI in React + TypeScript with animated workflows, supporting PNG/JPG up to 10 MB and achieved $\leq 0.5\%$ **PSNR distortion** (visually imperceptible, even post-JPEG compression), all via 100% client-side processing to eliminate server-side attack surface.
- Applied **Least Significant Bit (LSB) algorithm** on the green channel of RGBA pixels, using Canvas API for high-fidelity, lossless image manipulation. Added '~' delimiter for reliable payload extraction.
- Leveraged modern CSS (gradients, backdrop-filter, @keyframes) and Canvas API for real-time image processing, no external libraries or dependencies.
- Optimized for DX and UX: semantic HTML, ARIA labels, keyboard navigation, and contrast-compliant gradients, achieving 95+ in Accessibility & Best Practices.

Video Streaming Backend | Node.js, Express, MongoDB, Redis, Cloudinary, JWT [↗](#)

- Designed a normalized MongoDB schema utilizing **Mongoose** virtuals and population to efficiently query related User, Channel, and Video data without data redundancy.
- Structured the backend using clean layers (models/, routes/, controllers/, middleware/, utils/) and integrated Cloudinary for automated media optimization, implementing adaptive bitrate streaming and on-the-fly image resizing to reduce bandwidth usage.
- Mitigated IDOR (Insecure Direct Object Reference) vulnerabilities by securing 18+ endpoints with custom **JWT middleware**, validated through manual penetration testing.

AWARDS & CERTIFICATIONS

Novartis NEST Hackathon 2024 Semi-Finalist: Selected among top 160 teams from 32,000+ applicants nationwide for healthcare innovation.

Competitive Programming: Solved 330+ DSA problems on LeetCode, CodeForces, and GeeksforGeeks, Top 30% on LeetCode.

Hackathons & Open Source: Shipped 7+ features, fixed 5+ bugs in GSSoC 2024, and earned Hacktoberfest 2025 Supercontributor (6/6 PRs).

MongoDB Associate Database Administrator by FacePrep: MongoDB Associate DBA certified (84/100) via labs & proctored exam.