Ayush Vishwakarma

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linkedin.com/in/ayush • github.com/Ayush04 • Ayush's Portfolio

EDUCATION

Bachelor of Technology (B.Tech)   **Oct 2022 - Present**
Vellore Institute of Technology   **GPA:** 8.76

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, React-Route, 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; revamped 8+ features in one week, such as polls, likes, access control, and comment threading.
- Built full-stack features for 5 core entities, designed relational MongoDB schemas, implemented RESTful CRUD APIs with input validation, JWT-scoped role-based, error handling, 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.
- Integrated **Stripe** checkout supporting cards, and wallets; managed idempotent payment flows to prevent duplicate charges, validated across multiple test scenarios with 100% success.
- 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 ≤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 ⧉

- Structured a normalized ER schema (User ↔ Channel ↔ Video ↔ Subscriber) and executed strict Mongoose validation, reference population, and atomic update patterns to ensure data integrity.
- Structured the backend using clean layers (models/, routes/, controllers/, middleware/, utils/) and integrated **Cloudinary** for avatar/video uploads, auto-resizing avatars to 200×200, generating 720p fallbacks, and direct-to-Cloudinary uploads.
- Secured 18+ routes with **JWT middleware**, preventing 100% of unauthorized channel-edit attempts during manual penetration testing (e.g., ID tampering in /channels/:id/edit).

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.