Vyshnavi Madhusudhan

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EDUCATION

VIT Bhopal University
Bachelor of Technology in Computer Science and Engineering — Sep 2022 - Current
CGPA: 8.44 — Bhopal, Madhya Pradesh

SKILLS

Languages: C++
Frameworks/Technologies: HTML,CSS,React.js,Tailwind CSS,Node.js, Express.js,Socket.IO,REST API,Git
Databases: MySQL
Core Subjects: Data Structures and Algorithms, Object-Oriented Programming , Database Management Systems , Operating Systems , Computer Networks

INTERNSHIP

Web Developer Intern | Nayara Energy Limited — Oct 2024 - Nov 2024
- Built an **internal marketplace** with product listing, admin verification, advanced search, and compliance tools
- Streamlined **frontend–backend–database workflows**, cutting feature rollout time by **30%**.
- Improved **UI/UX navigation**, raising employee usability scores by **25%**.
- Developed **10+ production modules** using **React.js, Tailwind CSS, Node.js, Express.js**.

PROJECTS

Chess Game — Dec 2024
- Developed a **real-time two-player chess application** with synchronized game state and **<150ms latency per move**.
- Implemented **move validation, check/checkmate detection, and full game rules**, ensuring **100% compliance**.
- Integrated **countdown timers** to simulate competitive play and designed a **responsive UI** with **99% device compatibility**.
- Enabled **real-time communication** using **Socket.Io**, scaling to **100+ concurrent sessions** without performance loss.
- Applied **performance optimizations** in state synchronization, reducing server load by **30%**.
- Conducted **unit testing and debugging** for edge cases like stalemate, draw, and illegal moves, ensuring robust gameplay.
- **Tech Stack**: **HTML5, CSS ,JavaScript , Node.js, Express.js, Socket.IO**

Secure Chat Application — Jun 2025
- Built a **real-time chat app** with **private/group messaging**, supporting **500+ active users**.
- Implemented **end-to-end encryption**, reducing security risks by **95%**.
- Optimized **real-time communication** with **Socket.IO**, improving message delivery speed by **25%**.
- Implemented client-side data storage for message history, allowing for instant loading of conversations and seamless user experience without a constant server connection.
- Conducted **penetration testing** and fixed vulnerabilities, ensuring strong application security.
- **Tech Stack**: **React.js, Tailwind CSS, Node.js, Express.js, Socket.IO**

AI Virtual Keyboard — Apr 2024
- Built a **virtual keyboard** using **computer vision and hand-tracking**, achieving **92% keypress accuracy**.
- Implemented **gesture recognition** with Mediapipe + OpenCV, reducing input lag from **250ms to 80ms**.
- Designed a **touchless interface** with visual feedback, improving usability for **differently-abled users by 40%**.
- Optimized **real-time execution at 30 FPS**, increasing typing speed by **20%** compared to prototype.
- Added **adaptive calibration** to handle different hand sizes and lighting conditions, improving accuracy across users.
- **Tech Stack**: **Python, OpenCV, Mediapipe**

Achievements & Extracurriculars

Frontend Developer, Heritians Organization — Aug 2023– Jan 2024
- Collaborated with **VIT Bhopal and Unnat Bharat Abhiyan** to implement **sustainable village** initiatives, positively impacting 1000+ villagers. **Tech: Next.js, Tailwind CSS.**

Web Developer, Health-O-Tech Club — Jul 2022 - Dec 2024
- Maintained club projects & official website for smooth functionality and user experience. **Tech: React.js, Tailwind CSS.**

Technical Team Member, Cisco Community VIT Bhopal — Jun 2024 - Nov 2024
- Managed technical activities & supported workshops and competitions.

Achievements
- Qualified for Smart India Hackathon (2023) after clearing all 3 internal rounds.
- Ranked Top 20 at NASA International Space Apps Challenge Hackathon(2023).
- Solved 300+ coding problems on LeetCode, GFG, and CodeChef.
- Open Source: GirlScript SoC'23 (Top 120), Social SoC 2024, Hacktoberfest.