

# Manmohan Shukla

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| Gorakhpur, India

## EDUCATION

**Madan Mohan Malaviya University of Technology, Gorakhpur** 2023 – 2027  
B.Tech in Electrical Engineering CGPA: **7.37 / 10.0**  
**St. Xavier's Senior Secondary School, Hardoi** 2022  
Class XII (CBSE) Score: **86%**

## INTERNSHIP EXPERIENCE

**Full Stack Developer Intern** | *Multiqo Concept Pvt. Ltd.* Apr 2025 – Jul 2025

- Architected and deployed a scalable **MERN stack** e-commerce platform serving **1,000+ active users** with JWT authentication, role-based access control, and real-time order processing.
- Engineered **15+ RESTful APIs** using **Node.js** and **Express.js**, reducing average API response time by **30%** and eliminating critical frontend-backend integration bottlenecks.
- Built responsive UI with **React.js** and **Tailwind CSS**, increasing mobile conversion by **25%** and improving Lighthouse score from 62 to 89.
- Spearheaded the construction of CI/CD pipelines using **Jenkins** and **Docker**, reducing deployment times by **15%** and saving an estimated **50 hours** of engineering time per month.
- Integrated **Razorpay** payment gateway for secure digital transactions, facilitating processing of **Rs. 5+ lakh** in revenue within the first 8 months of launch.

## PROJECTS

**Realtime Collaborative Whiteboard (CanvasDraw)** — *HTML5 Canvas, JavaScript, WebSockets* [GitHub](#)

- Architected and developed a real-time collaborative whiteboard supporting **20+ concurrent users** with **sub-100ms latency** using WebSocket-based bidirectional communication.
- Implemented a scalable room-based architecture with isolated WebSocket channels, enabling seamless real-time synchronization across multiple users and reducing sync conflicts by **85%**.
- Engineered **role-based access control (RBAC)** with room-level view and edit permissions, decreasing unauthorized edits by **80%**.
- Optimized rendering performance through event batching and minimal state diffing, cutting redraw latency by **40%** and improving overall UI responsiveness by **2.5x**.
- Developed efficient real-time state synchronization mechanisms to maintain consistency across all clients, delivering an experience comparable to Miro and Excalidraw while handling **500+ drawing operations per second**.

**Interactive DFA Simulator with State Minimization** — *React, Express.js, JavaScript, JWT, MongoDB* [GitHub](#)

- Developed an interactive DFA simulator capable of processing input strings with **100% accuracy** across **200+ comprehensive test cases** covering multiple regular languages.
- Designed and implemented core DFA components including **transition tables**, **acceptance checking**, and **Hopcroft's minimization algorithm**, reducing the number of states by **45–70% on average**.
- Built an **interactive visualization and step-by-step tracing interface** supporting real-time execution for automata with up to **150 states and 75 transitions**.
- Optimized transition lookup using **hash map-based data structures**, achieving **sub-millisecond response time (< 0.8 ms)** and processing over **15,000 strings per second**.
- Ensured complete determinism by rigorously handling edge cases such as **dead states**, **unreachable states**, and **incomplete transitions**, resulting in **zero ambiguous computations**.

## TECHNICAL SKILLS

<b>Languages</b>	JavaScript, TypeScript, Python, C++, Java, SQL
<b>Frontend</b>	React.js, Next.js, Vite, HTML5, CSS3, Tailwind CSS
<b>Backend</b>	Node.js, Express.js, REST APIs, JWT Authentication,
<b>Databases</b>	PostgreSQL, MySQL, MongoDB, Neon
<b>Data &amp; Auto.</b>	Email Parsing, PDF/Excel Processing, Pandas, Numpy
<b>System Design</b>	Asynchronous Processing, Event-Driven Architecture, Caching, Retry Mechanisms
<b>DevOps &amp; Tools</b>	Git, GitHub, Docker, Postman, Vercel, CI/CD
<b>CS Fundamentals</b>	Data Structures & Algorithms, OOP, DBMS, Computer Networks, OS

## ACHIEVEMENTS

- **CodeChef 4-Star** coder (Max Rating: **1826**)
- Ranked **#111** in CodeChef Starters 221 (Div 2) out of **10,000+** participants
- Solved **400+ problems** on LeetCode (DSA, Dynamic Programming, Graphs)