Manan Santoki

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EDUCATION

Arizona State University Aug. 2025 – Present
Master of Science in Computer Science Tempe, AZ, USA

Vellore Institute of Technology Jul. 2021 – Aug. 2025
Bachelor of Technology in Computer Science and Engineering | CGPA: 7.90/10.0 Vellore, TN, India

EXPERIENCE

Balkrushna Technologies Pvt Ltd Jan. 2025 – Jul. 2025
Software Engineer | Onsite, Full-time

- Architected and developed **scalable full-stack web applications** using MERN stack with microservices architecture
- Built comprehensive CRM platform with **automated Jenkins CI/CD pipeline** integration for continuous delivery
- Implemented containerized deployment strategies using **Docker** and orchestrated multi-environment setups
- Developed remote code execution capabilities for seamless automation, deployment, and infrastructure management

Freelance Full-Stack Developer Apr. 2024 – Present
Independent Contractor | Remote, Part-time

- Engineered land registry platform (**Bhoopati**) using MERN stack with real-time Google Maps API integration
- Designed scalable database architecture for tokenized land ownership verification and transaction management
- Built attorney booking platform (**Octafiles**) with advanced video conferencing, content management, and real-time features
- Implemented **WebRTC-powered meeting system** supporting one-to-many consultations with optimized performance
- Deployed applications on cloud infrastructure with automated scaling and monitoring capabilities

Balkrushna Technologies Pvt Ltd Sep. 2023 – Dec. 2023
DevOps & Cloud Engineer Intern | Onsite, Full-time

- Designed and implemented robust **CI/CD pipelines** using Jenkins, automating build, test, and deployment workflows
- Developed comprehensive bash automation scripts for inter-server communication and environment provisioning
- Architected cloud infrastructure using **AWS services** including EC2, S3, and Load Balancers
- Established monitoring and logging solutions for production environments ensuring **99.9% uptime**

Jalaram Wiremesh Co. Nov. 2021 – Jan. 2022
Software Developer | Onsite, Part-time Intern

- Architected and developed **enterprise inventory management system** using Python and MySQL
- Created intuitive desktop application with Tkinter featuring advanced inventory operations and reporting
- Implemented comprehensive database design with optimized queries for real-time inventory tracking

PROJECTS

Backslash – Self-Hostable LaTeX Editor | *Next.js 15, React 19, PostgreSQL, Redis, BullMQ, Docker, Socket.IO* 2025

- Built an **open-source, self-hostable LaTeX editor** with live PDF preview, sandboxed Docker compilation, and a full REST API
- Implemented **isolated Docker containers** per build with network disabled, all capabilities dropped, and PID limits for security
- Developed real-time build updates via standalone **WebSocket server** with Redis pub/sub and BullMQ job queue

- Created complete **public API** with SHA-256 hashed API key authentication, developer dashboard, and interactive docs

WhatsApp SaaS Platform | *Next.js 14, TypeScript, PostgreSQL, Redis, BullMQ, WhatsApp Web.js* 2025
- Architected a **multi-tenant B2B WhatsApp marketing & automation SaaS** with 150+ REST API endpoints
- Built campaign builder, dynamic segmentation, team inbox, and **analytics dashboard** with role-based access control
- Developed **AI-powered WhatsApp chatbot** with natural language processing for personal chat automation
- Implemented **multi-session device management** with QR code pairing, webhook delivery, and WebSocket real-time events

Jarvis – AI Voice Desktop Assistant | *Tauri, React, TypeScript, Rust, SQLite, Sherpa-ONNX, Whisper* 2024 – Present
- Built a **Windows desktop voice assistant** with always-on wake word detection using Sherpa-ONNX and push-to-talk hotkey
- Integrated **OpenAI Whisper** for speech-to-text and Chatterbox TTS for natural voice responses with interrupt support
- Implemented hybrid command execution combining **local pattern matching** with LLM-powered tool calling for system control
- Developed with **Tauri + Rust** backend for native Windows integration: media control, app launching, and system tray

INS Chilka Endurance Monitoring System | *React, Vite, Bun, SQLite, Drizzle ORM, Tauri* 2025
- Developed a full-stack **Tauri desktop application** for managing Timed Endurance Runs at a naval training establishment
- Built hardware timing data integration with automated **enclosure-based scoring** and division standings calculation
- Implemented **JWT authentication** with role-based access (admin, organiser, developer) and complete audit trail system

Bhoopati – Enterprise Land Registry Platform | *MERN Stack, Google Maps API, GeoJSON* 2024
- Built full-stack land registry platform **reducing property verification time from weeks to minutes**
- Integrated Google Maps API with GeoJSON for **interactive property boundary visualization** and spatial queries
- Developed secure ownership tracking system with immutable transaction logs and complete audit trails
- Implemented comprehensive document management with file upload, storage, and verification workflows

Octafiles – Legal Services Marketplace | *MERN Stack, WebRTC, Socket.IO, AI/ML, MongoDB, Redis* 2024
- Architected comprehensive legal marketplace with attorney-client matching, booking system, and integrated case management
- Built production-ready **WebRTC video conferencing** with screen sharing, recording, and STUN/TURN server implementation
- Developed **AI-powered document drafting** system with legal template generation and intelligent auto-completion
- Implemented real-time communication suite using Socket.IO with secure messaging, file sharing, and live notifications
- Designed secure MongoDB schema with **end-to-end encryption**, audit trails, and GDPR compliance for legal data protection
- Achieved **70% reduction in consultation setup time** through automated booking and streamlined case management

Enterprise Inventory Control System | *Next.js, PostgreSQL, Node.js, Redis* 2024
- Designed robust PostgreSQL database schema handling **complex inventory relationships** and transactions
- Implemented advanced **caching strategies using Redis** for optimized query performance
- Developed responsive frontend with Next.js featuring real-time updates and interactive dashboards
- Created comprehensive reporting system with data visualization and automated alert mechanisms

Autonomous CRM Demo Environment Platform | *MERN Stack, CI/CD, PostgreSQL, Docker, Jenkins* 2024

- Architected full-stack platform reducing **demo setup time from 2-3 hours to under 8 minutes** with 99.5% success rate
- Implemented advanced data masking algorithms ensuring **GDPR compliance** while preserving referential integrity
- Built containerized microservices architecture with Docker and Jenkins CI/CD pipelines for automated deployment
- Created secure multi-tenant environment with JWT authentication, SSL certificates, and complete data isolation
- Achieved **70% reduction in infrastructure costs** and 95% client satisfaction through automated resource management

CERTIFICATIONS

AWS Solutions Architect – Associate (Mar. 2024) | **AWS Certified Cloud Practitioner** (Feb. 2024) | **Google Cloud Digital Leader** (Dec. 2023)

SKILLS

Languages: JavaScript, TypeScript, Python, Rust, SQL, Bash, Groovy

Frontend: React.js, Next.js 14/15, Tailwind CSS, Vite, CodeMirror 6, shadcn/ui, Radix UI, HTML5, CSS3, Bootstrap

Backend: Node.js, Express.js, Bun, Flask, Django, RESTful APIs, GraphQL, Microservices, WebSocket, Socket.IO, BullMQ

Databases: PostgreSQL, MySQL, MongoDB, SQLite, Redis, Drizzle ORM

Cloud & DevOps: AWS (EC2, S3, RDS, Lambda), GCP, Docker, Kubernetes, Jenkins, Terraform, CI/CD, Nginx, Load Balancing

AI / ML: OpenAI Whisper, LLM Integration, Sherpa-ONNX, Chatterbox TTS, NLP, WebRTC

Tools: Git, Tauri, Linux, Jira, WhatsApp Web.js, Zod, Swagger/OpenAPI, Figma