

# ANKAN MANOJ JAGTAP

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## Education

### Walchand College of Engineering, Sangli

Aug 2023 – May 2027

*Bachelor of Technology in Computer Science and Engineering; CGPA: 7.81 / 10*

**Relevant Coursework:** Data Structures, Algorithms, Database Management, Operating Systems, Computer Networks, Object-Oriented Programming, Software Engineering, System Design.

## Work Experience

### Software Engineering Intern, BuildZeroClub

Dec 2024 – Apr 2025

*Remote, India*

- Led development of 7 production backend features using Node.js, Express.js, PostgreSQL, MySQL, and Redis, collaborating with a 5-member engineering team across 2-week sprint cycles.
- Optimized database performance by refactoring SQL queries, configuring Redis caching layers, and integrating AWS S3, achieving a 60% improvement in API response time and 60% reduction in database load.
- Architected and documented 12 RESTful APIs following MVC and Object-Oriented design principles, enabling seamless integration with frontend applications and internal services.
- Diagnosed and resolved 10 production incidents through systematic log analysis, reducing Mean Time To Resolution by 60% and improving endpoint uptime to 99.5%.
- Automated customer feedback collection by building a voice-agent system with React, Next.js, Node.js, PostgreSQL, Redis, and S3, reducing manual effort by 80%.
- Communicated technical decisions through written design documents and code reviews, mentoring 2 junior interns on backend best practices.

## Projects

### GraphMind, Hybrid RAG and Long-Term Memory System

Feb 2026 – Mar 2026

- Architected a CQRS-based hybrid RAG system using Python with in-memory graph retrieval and zero-LLM routing, reducing latency from 1200ms to 15ms, a 98% improvement across 10,000 simulated queries.
- Engineered deterministic entity extraction using the Aho-Corasick algorithm and local vector embeddings, achieving 0.1ms extraction and 8ms embedding latency, 99% faster than baseline pipelines.
- Constructed an in-memory graph traversal engine with multi-source BFS and adjacency caching, reducing context retrieval latency to 1ms and supporting 50,000+ nodes per session.

### OUTFYLD, Real-Time Sports Facility Management System (MERN)

Jun 2025 – Mar 2026

- Launched a full-stack sports booking platform with availability validation, MongoDB transactions, and concurrency-safe operations, reducing scheduling conflicts by 80% during peak usage.
- Accelerated backend performance through query indexing, Redis caching, and asynchronous workers, improving API response times by 65% under concurrent load testing with 500+ users.
- Integrated Razorpay payment gateway with secure webhooks, automated testing, and graceful failure handling, achieving 75% test coverage and reliable transaction processing.

### ChameleonUI, Adaptive AI-Powered Chrome Extension

Dec 2025 – Jan 2026

- Researched device-signal monitoring patterns and built a hybrid adaptive engine that evaluates battery, network, CPU, and memory every 2 seconds, computing a 0–100 capability score across 4 performance tiers.
- Implemented rule-based UI adaptation using CSS injection, DOM transformations, and MutationObserver guards, reducing rendering overhead by 60% on low-resource devices.
- Built smart caching and persistent state management using chrome.storage and Shadow DOM isolation, minimizing redundant AI calls and improving response latency by 35%.

## Technical Skills

- **Languages & OS:** C, C++, JavaScript, TypeScript, SQL, Bash; Linux (Ubuntu, Arch).
- **Backend & Systems:** Node.js, Express.js, RESTful APIs, JWT, RBAC, MVC, CQRS, API Design, Async Processing, Event-Driven Architecture, Load Balancing, Fault Tolerance; Redis, PostgreSQL, MySQL, MongoDB.
- **Frontend & UI:** React, Next.js, shadcn/ui, Tailwind CSS, Zustand, Shadow DOM.
- **AI & Data Systems:** RAG, Sentence Transformers, Vector Embeddings, LLM Integration (Gemini API).
- **Cloud & DevOps:** AWS (EC2, ECS, EKS, S3, RDS, Lambda, SQS, SNS, DynamoDB, CloudWatch), Docker, Kubernetes, CI/CD (GitHub Actions), Git, Agile and Scrum.

## Achievements & Leadership

- Solved **600+** DSA problems on **LeetCode (Knight)** and **200+** on **CodeChef**, earning a **3-Star** rating with peak of 1650.
- Secured **3rd place** in the ACM MongoDB Challenge among **100+** participants, demonstrating database design and query optimization expertise.
- Earned Finalist position at **Walchand Imagine Cup**, **WCE ACM Hackathon**, **GHR Hack 2.0**, and **Vishwanova**, competing among **200+** teams nationally.
- Presented technical sessions on **Linux File Systems** and **Docker Containerization** at WLUG to **200+** attendees, improving audience engagement by 20% through interactive Q&A and live demos ([Post](#)).
- Resolved JSON policy evaluation issues in **Kyverno CLI**, preventing silent validation skips and improving policy enforcement reliability; implemented AWS API Gateway to Kubernetes Service/Ingress mapping in **Meshery** while fixing schema validation issues and maintaining DCO-compliant workflows. ([GitHub](#)).