

# Ashutosh Jha

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## EDUCATION

### B.Tech in Computer Science and Engineering

Dr B. R. Ambedkar National Institute of Technology, Jalandhar (NIT Jalandhar)

Nov 2021 - Jul 2025

CGPA - 7.79/10

## TECHNICAL SKILLS

- **Programming Languages:** C, C++, Python, JavaScript, Java
- **Web Technologies:** React.js, Next.js, HTML/CSS, Tailwind, Node.js, MongoDB, MySQL, PostgreSQL, Fast API, REST, Spring Boot
- **Cloud & DevOps:** AWS (IOT-Core, EC2, S3, EKS), Docker, Git, Jest, Kibana, Jenkins
- **Relevant Coursework:** Data Structures and Algorithms, Object-Oriented Programming, Operating Systems, Database Management Systems, Computer Networks

## PROFESSIONAL EXPERIENCE

### Software Engineer

Jan 2025 – Present

*Paytm*

*Noida, India*

- Contributing to the engineering of next-generation **RTOS-based IoT payment devices** such as Soundbox & Wireless Dynamic QR machines
- Led the end-to-end development of the **Display Soundbox and India's first AI Soundbox**, improving real-time payment notifications and enhancing merchant experience across large-scale deployments.
- Developed AI-driven automation pipelines to streamline device workflows and built secure terminal-based tooling enabling direct interaction with **AWS IoT Core**.

### Software Developer Intern

Mar 2024 – Jun 2024

*Denr Financial Services*

*Remote*

- Developed and refined core screens of a cross-platform mobile application using React Native, ensuring smooth navigation and dynamic, data-driven UI flows.
- Integrated AWS-backed APIs (Cognito, S3, Lambda) into the app, ensuring reliable communication between frontend components and backend services.
- Wrote Jest-based unit tests for key UI and logic components, improving overall app reliability and reducing regression issues.

## PROJECTS

### Push2Prod — Automated Cloud Deployment Platform | Node.js, AWS (EC2, S3, EKS), Docker

[GitHub](#)

- Engineered an end-to-end deployment automation platform that cut deployment time by 30% and improved rollout reliability by 20%.
- Designed a fault-tolerant microservices architecture with Redis-backed task queues, enabling 100+ concurrent deployments.
- Implemented a CI/CD pipeline using GitHub Actions and AWS services, standardizing build, test, and release workflows across environments.
- Integrated telemetry, structured logging, and performance metrics to monitor system health and optimize deployment throughput.

### OktaDB — Embedded Relational Database Engine | C, File Systems, B-Tree Indexing

[GitHub](#)

- Built a miniature relational database from scratch in C, including storage engine, query layer, and indexing.
- Implemented a custom binary file format with page-level storage, serialization, and safe file truncation logic.
- Designed and integrated a B-Tree based indexing system enabling fast  $O(\log n)$  reads and inserts.
- Developed a SQL-like query executor supporting **INSERT**, **SELECT**, **DELETE**, and basic filtering.
- Implemented buffer management, CLI tooling, and modular architecture inspired by real-world DBMS design.

### ThrottleX — API Rate Limiting & Throttling Service | Java, Spring Boot, MySQL, Docker

[GitHub](#)

- Designed and built a high-performance, pluggable rate-limiting engine inspired by API gateways like Kong, NGINX, and Envoy.
- Implemented token-bucket and sliding-window algorithms supporting per-user, per-IP, and per-route throttling policies.
- Developed a standalone Spring Boot microservice with configurable middleware that can be embedded into any backend stack.
- Persisted usage metrics in MySQL with optimized queries for fast counter updates under high concurrency.
- Containerized the service with Docker and exposed administrative APIs for policy management and real-time monitoring.

## ACHIEVEMENTS & CERTIFICATIONS

- Smart India Hackathon 2023 - **Finalist (PS: SIH-1461)**
- CodeChef Starters 176 - **Global Rank 374**
- Pixel Perfect Hackathon 2023 - **2nd Prize** among 120 teams from NIT Jalandhar
- Codeforces - **Specialist with 1409 [Max Rating]**