

Ashutosh Kumar Vishwakarma

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Education

Indian Institute of Information Technology (IIIT), Bhopal

B.Tech in Computer Science and Engineering

Sem VI SPI: 9.85 | Department Rank 1

Aug 2023 – May 2027

CGPA: 8.79/10

Relevant Courses: Data Structures & Algorithms, DBMS, Software Engineering, OOP, Operating System, Computer Networks, Distributed Systems, Cryptography & Information Security

Experience

Software Engineering Intern, QuickIntell | United States

Nov 2025 – March 2026 | Remote

- Architected type-safe database schemas with Prisma and PostgreSQL, incorporating senior engineer code review feedback to align with existing architectural patterns and ensure consistent data contracts between independently deployed frontend and backend services.
- Onboarded into an existing production codebase and built an analytics module in Node.js and TypeScript to process and aggregate complex event data structures for internal reporting dashboards.
- Implemented JWT-based authentication and session management with input validation and sanitization across REST API endpoints, handling HTTP request/response lifecycles and enforcing secure data contracts between frontend and backend services.

Technical Projects

LOBE – Low-Latency Limit Order Book & Matching Engine

May 2026 - Jun 2026

C++17, TypeScript, Node.js, Python | Cross-Language Systems Integration

[Source](#)

- Engineered a single-threaded, lock-free price-time priority (FIFO) matching engine in C++17, eliminating synchronization overhead to achieve P50 latency of 102 ns and P99 of 378 ns across 100K operations.
- Designed core data structures using `std::map` for $O(\log N)$ price-level access and `std::unordered_map` for $O(1)$ order cancellation by ID, supporting Limit, Market, and Cancel order types.
- Built a Python benchmark harness to generate 100K synthetic order sequences and validate P50/P99 latency claims against the C++ matching engine.

Baskit – Scalable E-commerce Platform

Apr 2025 – May 2025

React, Node.js, Express, MongoDB, Redis, Stripe, Gemini API

[Source](#) | [Live Demo](#)

- Enforced strict data consistency via MongoDB transactions across payment and inventory flows under high-concurrency load, validated with Apache JMeter simulating 500+ concurrent transactions; engineered a Redis caching layer cutting database read load by 40%.
- Implemented secure payment pipelines using Stripe Webhooks with end-to-end event validation and idempotency handling, preventing duplicate transaction processing under high-concurrency load.
- Integrated an AI-driven product recommendation engine using Google Gemini `text-embedding-004` API, executing cosine similarity search on MongoDB Atlas Vector Search to deliver personalized results with sub-50ms latency.

Achievements

- **Competitive Programming:** LeetCode Knight (Rating: 1900+); AIR 70 nationally in Naukri Engineers' Ring of Honour; solved 900+ problems (LeetCode, Codeforces, and CodeChef) with emphasis on graphs, dynamic programming, and trees.
- **Contest Performance:** Ranked 837/41,000+ (top 3%) in LeetCode Weekly Contest 492 and 887/40,000+ (top 3%) in Weekly Contest 493; Global Ranks 75 (Starters 181), 136 (Starters 176), and 271 (Starters 230) on CodeChef.
- **AlgoUniversity Graph Theory Camp:** Selected among top 2.5% of 40,000+ applicants nationwide.
- **Inter-IIIT:** Rank 19, OPTIGO'26 Inter-IIIT Coding Competition — Coding Club CODAME, IIIT Bhopal (2026).

Technical Skills

- **Languages:** C++, TypeScript, JavaScript (ES6+), SQL, Python
- **Core Competencies:** Object Oriented Programming and Design, Algorithms, Data Structures, Network Programming (TCP/IP), Distributed Systems, Service Oriented Architecture, Rapid Language Acquisition
- **Databases & Cloud:** PostgreSQL, MongoDB, Redis, Docker
- **Developer Tools:** Git/GitHub, GitHub Actions (CI/CD), Postman, Apache JMeter, WSL, Vercel, AWS
- **Frameworks & Libraries:** Next.js 14, React.js, Zustand, Redux Toolkit, Express.js, Prisma ORM