

# Ashirwad Singh

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## EDUCATION

### VIT Bhopal University

B.Tech in Computer Science (Cyber Security and Digital Forensics) **CGPA: 8.52**

Kothrikalan, MP

2022 – 2026

### Reliance Foundation

Class XII (CBSE) **Percentage: 91.2%**

2021

### Yak Public School

Class X (CBSE) **Percentage: 91.8%**

2019

## PROJECTS

### RepoSense [GitHub]

Summer 2025

- Designed a RAG pipeline with **LangChain** and **Google Gemini AI**, exposing a real-time QA interface within a **Next.js 15** application.
- Automated meeting transcription and summarization via **Assembly AI** webhooks, delivering speaker-labeled insights in under 30 seconds.
- Orchestrated **Stripe** credit-based access, onboarding 10+ developers on a free-tier model and driving a 40% paid upgrade rate.
- Optimized document chunking and vector embedding workflows to reduce query latency by 50% and support 1,000+ concurrent sessions.

### Dev-Rooms [GitHub]

Summer 2025

- Architected a tag-based room discovery service with **Next.js** and **Drizzle ORM** on **NeonDB**, enabling 15+ concurrent user sessions.
- Powered real-time peer-to-peer screen/code sharing via **GetStream React SDK**, sustaining 95% uptime and sub-100ms latency.

### Chess Master [GitHub]

Winter 2025

- Developed a real-time multiplayer chess engine with **Socket.IO**, **Node.js**, and **Express**, achieving 99% event delivery reliability.
- Validated moves via **chess.js** and enabled Spectator Mode with live state synchronization for 100+ concurrent games.
- Orchestrated move history tracking with back/forward navigation and persisted session state across refreshes for 95% game retention.

### Multi-Threaded Proxy Server [GitHub]

Spring 2025

- Designed and implemented a **multi-threaded** HTTP proxy server in C, managing concurrent client connections using threads and semaphores to enforce connection limits.
- Applied operating system concepts like thread synchronization, mutual exclusion, and resource management using **pthread\_mutex** and semaphore primitives.
- Built a custom **LRU cache** using dynamic memory allocation and linked list data structures, applying modular programming and **object-oriented** principles for code organization and maintainability.

## TECHNICAL SKILLS

**Languages:** C++, TypeScript, JavaScript, SQL, HTML, CSS, Tailwind

**Frameworks & Tools:** React, Next.js, Node.js, Express, Socket.IO, LangChain, Docker, Git, Cypress, Stripe, VS Code

**Databases & Auth:** MongoDB, NeonDB, Redis, PostgreSQL, MySQL, Prisma, Drizzle ORM, NextAuth.js, JWT

**Coursework:** Data Structures and Algorithms, Object-Oriented Programming, Operating Systems, Database

Management Systems, Computer Networks, Theory of Computation and Compiler Design, Web Security, Amazon Web Services (AWS), Cyber Threat and Analysis, Software Vulnerability Testing, Software Engineering

## ACCOMPLISHMENTS

**CodeForces** (Blagosloveniye): Max. **Rating** 1447 (Specialist); Global Ranks: 1617, 2310; Solved 500+ Problems

**CodeChef** (ethant5698): Max. **Rating** 1900 (Peak 1912), 4 Coder; Global Ranks: 77, 426, 452

**LeetCode** (Ethan038): **Rating** 2161 (Guardian); Global Ranks: 86, 509, 886; Solved 700+ Problems

## CERTIFICATIONS & EXTRACURRICULAR ACTIVITIES

**MongoDB Certified Associate Database Administrator**

Issued by MongoDB [Credly]

**MongoDB Certified Atlas Administrator**

Issued by MongoDB [Credly]

**Extracurricular Achievements:** State-Level Boxing Medalist (Gold, Bronze); National-Level Representative