

# Om Singh

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## Education

### VIT Bhopal University

Bachelor of Technology in Computer Science Engineering; CGPA: 8.50

Bhopal, India

Expected Graduation: May 2026

## Experience

### Backend Intern – Snowflake (Startup)

Nov 2024 – Feb 2025

Remote Freelance Engagement

- Delivered **4 production-grade backend services** using Go and PostgreSQL to support client operations.
- Collaborated with a **5-member remote team** to align backend services with client requirements, achieving 100% feature completeness.
- Engineered regression and API test automation workflows, increasing test efficiency by **60%**.
- Cut development time by **25%** through reusable boilerplates and modular API structures.
- Implemented JWT and RBAC-based login systems to enhance security and enforce role-based access.

### Backend Intern – PVRVDOX

Apr 2024 – Sept 2024

Remote Internship

- Reduced backend response times by **35%** by optimizing Go API endpoints and creating database indexes in PostgreSQL.
- Implemented secure JWT-based authentication using Go middleware, improving API security and session management for clients.
- Resolved over **20** frontend-backend integration issues, reducing average bug resolution time by **35%**.

## Technical Skills

**Languages:** Go, TinyGo, C++, SQL, Bash

**Backend:** gRPC, Gin, Microservices, REST APIs, SQLC, Redis, Asyncq, Docker, WebAssembly, WASI, P2P Networking

**Security:** JWT, PASETO, NaCl Cryptography, RBAC

**Other:** Data Structures and Algorithms, Computer Networks, Operating Systems

## Projects

### Nimbus | Go, PostgreSQL, gRPC, Microservices, Grafana

- Engineered a robust banking system with REST/gRPC APIs, secure authentication, asynchronous task processing, and containerized deployment.
- Achieved 28k RPS** throughput with **sub-4ms** latency and eliminated schema inconsistencies using SQLC and migrations.
- Developed comprehensive unit test suites achieving **80%+ code coverage** to ensure reliability and maintainability.
- GitHub: [github.com/OmSingh2003/nimbus](https://github.com/OmSingh2003/nimbus) | Live Demo: [nimbus-online.vercel.app](https://nimbus-online.vercel.app)

### Decentralized Ledger | Go, BoltDB, CLI, PoW

- Developed a blockchain prototype implementing UTXO-based transactions, dual consensus, and wallet management.
- Boosted validation throughput by **8×** through a parallel pipeline and **realized 60% faster serialization**.
- GitHub: [github.com/OmSingh2003/Decentralized-Ledger](https://github.com/OmSingh2003/Decentralized-Ledger)

### Glass – Serverless WASM Runtime | Go, TinyGo, WebAssembly, WASI

- Built a serverless runtime inspired by Faasm, enabling multi-tenant WebAssembly function execution with strong isolation.
- Delivered 15,000 RPS** throughput and **sub-10ms** cold starts while reducing memory footprint by **70%** compared to containers.
- GitHub: [github.com/OmSingh2003/Glass](https://github.com/OmSingh2003/Glass)

## Leadership

- Led teams of 10 and 5 to 1<sup>st</sup> place among 500+ entries in Project Exhibitions 1 and 2 and Engineering Projects in Community Service, achieving the highest evaluation scores (95%+) for innovation and execution.