Om Singh

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Education

VIT Bhopal University — Bhopal, India
Bachelor of Technology in Computer Science Engineering; CGPA: 8.50 — *Expected Graduation: May 2026*

Experience

Backend Intern – PVRVDOX — Apr 2024 – Sept 2024
Remote Internship

- Reduced backend response times by **35%** by optimizing Go API endpoints and adding database indexes in PostgreSQL.
- Implemented secure JWT-based authentication using Go middleware, improving API security and session handling for our client's.
- Helped resolve 20+ frontend-backend integration issues, reducing average bug resolution time by **35%**.

Backend Intern – Snowflake (Startup) — Nov 2024 – Feb 2025
Remote Freelance Engagement

- Delivered **4 production-grade backend services** using Go and PostgreSQL for real-world client websites.
- Engineered robust test automation (regression, API, UI), increasing overall test efficiency by up to **60%**.
- Cut development time by **25%** by building reusable boilerplates and modular API structures.
- Implemented JWT and RBAC-based login systems for secure access control.

Certifications

Backend Master Class (Go, PostgreSQL, gRPC, Kubernetes) — Jan 2024
Udemy

Cloud Computing — Jan – Apr 2024
NPTEL (12-week course) — *Certification ID: NPTEL24CS17S352901070*

Projects

VaultGuard API | *Go, PostgreSQL, gRPC, Microservices*

- A robust, modular backend banking system demonstrating modern Go microservices, secure auth, and async task handling.
- Accomplished **28k RPS** throughput with **sub-4ms latency** by building a production-grade banking API using gRPC and REST.
- Reduced schema errors by **100%** using SQLC for type-safe DB access and migration tooling via golang-migrate.
- GitHub: github.com/OmSingh2003/VaultGuard-API | Live Swagger UI

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

- A scalable Go blockchain prototype featuring UTXO-based transactions, dual consensus (PoW/PoS), and wallet management.
- Achieved **60% faster serialization** using Protocol Buffers in a blockchain system with dual consensus (PoW/PoS).
- Boosted block validation throughput by **8×** through parallel pipeline redesign using goroutines.
- GitHub: github.com/OmSingh2003/Decentralized-Ledger

HashVault | *Go, TCP, P2P Networking*

- Built a content-addressable file store with integrity checks via SHA-256 hashing, reducing data loss risk.
- Implemented a custom P2P protocol over TCP, allowing peer discovery and file exchange without central servers.
- GitHub: github.com/OmSingh2003/HashVault

Technical Skills

Languages: Go, C++, SQL, Bash
Backend: gRPC, Gin, Microservices, REST APIs, gRPC-Gateway, SQLC, Redis, Asynq, Docker, P2P Networking (TCP)
Blockchain: Proof-of-Work (PoW), Proof-of-Stake (PoS), Merkle Trees, UTXO Model, Wallets (ECDSA), BoltDB
Security: JWT, PASETO, NaCl Cryptography, RBAC
Other: Data Structures and Algorithms, Computer Networks,Operating System