VISHWAJIT MALL

Backend Developer | Node.js, Python, AI/LLM Systems

New Delhi, India | +91 8920352115 | vishwajitmall50@gmail.com | vishwajit-labs-web.vercel.app
linkedin.com/in/vishwajit-vm-179a61149 | github.com/vishwajitvm | pypi.org/user/vishwajitvm

PROFESSIONAL SUMMARY

Backend Developer with **5+ years** of experience building production REST APIs and services in Node.js/TypeScript (NestJS, Express.js) and Python (FastAPI) on PostgreSQL, MySQL, MongoDB, and Redis. Sole backend developer of FLO at SPNX: 244 REST operations, a data-driven workflow engine, Entra ID auth, and Azure integrations. Builds AI systems end to end: RAG pipelines, tool-calling agents, MCP tool gateways with human approval, and LLM routing with fallback across OpenAI, Gemini, Groq, and Ollama. Ships with Docker, CI/CD, automated tests, and OpenTelemetry/Grafana monitoring.

TECHNICAL SKILLS

Languages: TypeScript, JavaScript, Python, SQL, PHP
Backend: Node.js, NestJS, Express.js, FastAPI, Pydantic, Laravel, REST API design, GraphQL, WebSockets, OpenAPI/Swagger, microservices, event-driven design (transactional outbox), Celery
AI / LLM: LLM integration (OpenAI, Gemini, Groq, Mistral, NVIDIA NIM, OpenRouter, Hugging Face, Ollama), RAG, LangChain, LangGraph, AI agents (ReAct, tool calling), multi-agent workflows, Model Context Protocol (MCP), LiteLLM, prompt engineering, embeddings, vector search (Qdrant, pgvector), LLM fallback routing
Databases & ORMs: PostgreSQL, MySQL, MongoDB, Redis (caching, rate limiting), Qdrant, pgvector, Prisma, SQLAlchemy 2
Security & Auth: JWT, OAuth 2.0 / OIDC (Microsoft Entra ID, Keycloak), RBAC, CSRF, rate limiting, AES-256-GCM, Azure Key Vault
Cloud & DevOps: Docker, Docker Compose, GitHub Actions, GitLab CI, Nginx, IIS, AWS (S3, RDS), Azure (Blob, Key Vault), Linux
Testing & Observability: Jest, pytest, Playwright, unit testing, API end-to-end testing, OpenTelemetry, Prometheus, Grafana
Tools & Practices: Git, GitHub, GitLab, JIRA, Azure DevOps, Agile/Scrum, system design, AI-assisted development (Claude Code)

PROFESSIONAL EXPERIENCE

Backend Developer | SPNX, India **Oct 2026 – Present**

FLO – VAT Registration Platform | *Node.js, NestJS 11, TypeScript, PostgreSQL 17, Prisma 7, Microsoft Entra ID, Azure, Jest*

- Sole backend developer (100 of 101 commits) of FLO, a staff workspace and client portal that runs EU VAT registrations for overseas businesses: **244 REST operations**, 34 NestJS modules, 63 Prisma models.
- Designed a data-driven workflow engine in pure TypeScript that runs each country's registration process as versioned data; the same guards enforce business rules and return each user's allowed actions.
- Implemented Microsoft Entra ID (OIDC) sign-in, Postgres-backed sessions with CSRF protection, and RBAC with 4 roles and 21 permissions; separate portal serializers keep internal data out of client responses.
- Integrated Azure Blob Storage, Azure Key Vault (AES-256-GCM for stored credentials), ClamAV / Defender virus scanning, Microsoft Graph e-mail, and Adobe Acrobat Sign behind ports and adapters.
- Built a background worker on a Postgres transactional outbox with advisory-lock leader election that runs 15 scheduled jobs without Redis or a separate queue.
- Cleared 3 security-test (VAPT) rounds; wrote 63 Jest spec files and a 24-suite API end-to-end harness; set up Claude Code project rules and skills for AI-assisted development.

Full Stack Developer | Bee Logical Software Solutions, Pune, India **Nov 2022 – Jun 2026**

- Core backend developer on 5 production platforms: designed APIs, data models, and auth, and worked with AI/ML engineers to ship LLM features. Received the **Outstanding Performance Award (Nov 2024)**.

SmartHR – AI Interview Platform | *Python, FastAPI, LangChain, LangGraph, RAG*

- Built an AI interview pipeline with LangChain for LLM orchestration and LangGraph for stateful, multi-turn interviews.
- Built RAG over job descriptions to generate role-specific questions, and agent-based scoring that writes candidate reports.

SetBot – Property Booking Platform | *Node.js, Express.js, TypeScript, MySQL, Angular*

- Built REST APIs for listings, bookings, and admin reports for studios, hostels, restaurants, and shops, with JWT auth and RBAC across 4 roles.
- Built a booking engine with real-time slot validation and offer rules that stay correct under concurrent requests.

Bella Canvas – 3D Product Customization E-Commerce | *Laravel, Vue.js, MySQL (AWS RDS), AWS S3, Shopify API*

- Led backend design for a 5-stage product design lifecycle: REST APIs for designs and assets, Shopify order sync, and an S3 pipeline serving textures for real-time 3D rendering.

MahaEseva.com – Online Rent Agreements | *Laravel, MySQL*

- Built admin and customer portals to create and e-sign government-compliant rent agreements across India, with online payments, biometric verification, RBAC, and lead management.

Havu – Events-Based Dating Platform (Admin Portal) | *React, GraphQL, AWS Amplify*

- Built the admin portal for events, users, cities, and venues, with RBAC and multi-city scheduling.

Software Developer | **WebReinvent, New Delhi, India** **Jul 2022 – Oct 2022**

- Built features and fixed bugs in VaahCMS, an open-source Laravel and Vue.js CMS (MySQL, REST APIs).

Full Stack Developer | **BluBrandz Technologies Pvt Ltd, New Delhi, India** **Aug 2021 – Jun 2022**

- Built Angle Fertility (hospital management: patient records, appointments, clinical workflows), Aragma (event management), and Unicorn Equipments (equipment tracking dashboard) with Laravel and MySQL.

PROJECTS AND OPEN SOURCE

DevFlow-AI – AI Code Review and CI/CD Platform | github.com/vishwajitvm/DevFlow-AI

Tech: *Python 3.13, FastAPI, SQLAlchemy 2, Celery, PostgreSQL, Redis, MCP, Ollama, Next.js 16, Docker, OpenTelemetry*

- Built a self-hosted AI code-review, auto-fix, and CI/CD platform for GitHub and GitLab: **132 API endpoints**, 31 tables, 30 Celery tasks, 17 Docker services.
- Wrote a framework-free tool-calling agent loop for 9 roles (analyst, fixer, code and security reviewers) with JSON-schema-validated output, token budgets, and AST caller-compatibility checks.
- Built an LLM router across 90 free models (10 providers) with 429 cool-downs and Ollama fallback, and an **MCP gateway** (57 tools) that gates every write with one-time keys and go / ask / stop rules.
- Ran reviews in no-network, read-only Docker sandboxes; **392 unit, 67 API end-to-end, and 43 Playwright tests** run in GitHub Actions and GitLab CI.

OmniShell – LLM-Planned Shell Automation with Human Approval | github.com/vishwajitvm/OmniShell

Tech: *Python, FastAPI, LiteLLM, Pydantic, PostgreSQL, Redis, NestJS, psutil, Docker*

- Built a FastAPI service that turns natural-language requests into OS workflows (Linux, macOS, Windows) across 19 capability types, using regex intent routing and one LiteLLM planning call with Pydantic-validated JSON.
- Designed a PostgreSQL scheduler with FOR UPDATE SKIP LOCKED claims, heartbeat leases, and SHA-256-hashed expiring approval tokens for human sign-off.

Hopline – Encrypted Peer-to-Peer File Transfer | github.com/vishwajitvm/Hopline

Tech: *Node.js, WebRTC, WebSockets, React 19, Vite, Electron, AES-256-GCM, Docker, GitHub Actions*

- Built a peer-to-peer file transfer app for browser, desktop (Electron: Windows, macOS, Linux), and CLI with a Node.js WebSocket signaling server; live at hopline.onrender.com.
- Designed a WebRTC protocol that sends 64 KiB frames over up to 4 parallel connections, with flow control, SHA-256 verification, and resume after a disconnect.
- Built encrypted TCP transfer for CLI and desktop (CPace PAKE, HKDF, AES-256-GCM): **10 GiB in 56.8 s**, SHA-256 verified.

TenantMind-AI – Multi-Tenant AI Property Management | github.com/vishwajitvm/TenantMind-AI

- Built a multi-tenant FastAPI backend (database per tenant in MongoDB, Keycloak JWT), per-tenant Qdrant collections for document search, Celery workers, and an LLM gateway with fallback (Gemini, Groq, OpenRouter, Ollama) that logs latency and tokens per call.

AgentHive – Multi-Agent Orchestration Platform | github.com/vishwajitvm/AgentHive

- Built a ReAct agent platform (FastAPI, PostgreSQL, Celery, Next.js) with a database-configured LLM router (Gemini, OpenAI, Groq, Hugging Face, Ollama) with retry and fallback, 40 tools with per-agent allow-lists, and pgvector memory.

RepoMind – AI Codebase Q&A with RAG and LangGraph | github.com/vishwajitvm/RepoMind

- Built a LangGraph and FastAPI assistant that answers questions about GitHub repositories with file and line citations, using AST-based code chunking, Qdrant vector search, live GitHub API lookups, and 9-provider LLM fallback.

PolicyBot – RAG Q&A for Company Policies | github.com/vishwajitvm/PolicyBot

- Built a hybrid RAG pipeline (FastAPI, Qdrant, MongoDB, React) with vector and keyword retrieval, freshness-aware ranking, citations, and confidence scores, a LangGraph ingestion workflow, and per-stage traces for evaluation.

Tallyko – Multi-Tenant Restaurant and Retail POS | github.com/vishwajitvm/Tallyko

- Built a multi-tenant POS (FastAPI, PostgreSQL row-level security, 38 tables, Redis) with an offline-first React Native (Expo) app that syncs queued bills without duplicates, local OCR menu import, and 400+ automated tests.

TraceNest – Python Logging SDK on PyPI | pypi.org/project/tracenest

- Published a zero-dependency, thread-safe logging SDK (18 releases) with daily rotation, recursive secret masking, FastAPI middleware, a built-in log viewer, and 42 tests; used in DevFlow-AI and OmniShell.

More AI Projects | github.com/vishwajitvm

- **LokTathya**: civic data platform for India (FastAPI, Next.js, PostgreSQL/PostGIS, 50 tables) with a GitHub Actions pipeline running migrations and 76 tests.
- **NL-Automation-Platform**: plain-English automations on 6 FastAPI microservices, with a LangGraph clarification agent and a fail-closed safety classifier.
- **FitTrack-AI**: meal nutrition from a photo via vision LLMs, grounded in USDA and Open Food Facts data (Next.js, FastAPI).

EDUCATION

Bachelor of Science (B.Sc.) | Panjab University, Chandigarh **2015 – 2018**