

# Kushagra Tiwari

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## EDUCATION

National Institute of Technology Karnataka, Surathkal

Bachelor of Technology in Electrical and Electronics Engineering

Aug 2023 – May 2027 (Expected)

CGPA: 7.14/10

## EXPERIENCE

**Magi** | Software Development Engineer Intern

Apr 2026 – Present

TypeScript, NestJS, Python, FastAPI, Celery, Redis, PostgreSQL, MCP, OAuth 2.0

Remote

- Owned the platform's **MCP server** end to end, exposing **59 schema-validated tools** across 8 domains to AI agents with **RBAC** permission checks, backed by **191** unit and integration tests.
- Secured agent and user access with an **OAuth 2.0** flow for MCP using **PKCE** (S256), refresh-token grants, and **RFC 7591** dynamic client registration, plus **Microsoft SSO** (Entra ID) login.
- Built the scheduling service for a **competitive-intelligence** concierge agent on **FastAPI** and **Celery**, chaining **3 task stages** so recurring series self-extend, deduplication keys keep dispatch idempotent, and a reconcile sweeper recovers every missed run.

**PipesHub** | Software Development Engineer Intern

Jan 2026 – Jun 2026

Electron, TypeScript, Node.js, Python, WebSockets, AWS S3, Azure, GCP, GitHub Actions

Remote

- Landed **31 merged pull requests** into an open-source AI platform (**3.2k+ GitHub stars**), owning the **Electron** desktop app end to end including its build and packaging pipeline and a **WebSocket** desktop-proxy gateway with a path allowlist.
- Built local filesystem sync end to end, from **Electron** file watchers with a write-ahead journal, resumable batch cursors, deduplication windows, and quarantine for poison batches to the **Python** ingestion connector, covered by **250+ tests**.
- Shipped and hardened **5 cloud connectors** (S3, GCS, Azure Blob, Azure Files, GitLab) with revision-based change detection, and added the **CI integration-test workflow** gating every pull request.

**Acredge** | Software Development Engineer Intern

Nov 2025 – Apr 2026

Python, n8n, LLM APIs, Recombee, Vector Search, WhatsApp Business API (AiSensy), Google Sheets API, Webhooks

Remote

- Reduced property-search retrieval latency by **60%** by parallelizing vector and keyword pipelines, collapsing ranking stages, and removing blocking external API calls.
- Took the AI property-enquiry assistant to **2 channels**, website and **WhatsApp**, by integrating the **WhatsApp Business API** via **AiSensy** with webhook-driven inbound message handling.
- Launched personalized property recommendations on **Recombee**, streaming user and item interaction events for relevance ranking, orchestrated in **n8n** across **Google Sheets**, email, and internal HTTP APIs.

**LeastAction Labs** | Software Development Engineer Intern

Oct 2025 – Feb 2026

React, Node.js, Docker, AWS EC2, Nginx, Linux, CI/CD

Remote

- Shipped **3 core surfaces** of a self-hosted data workflow platform in **React** and **Material UI**: pipeline authoring, an embedded editor, and live execution output.
- Consolidated run orchestration into **1 API endpoint** that triggers and tracks sandboxed task runs, returning workspace state, execution metadata, and job results under validated request contracts.
- Took the marketplace and core product to production on **AWS EC2** with **Docker** and **CI/CD**, authoring the **Nginx** reverse proxy that fronts **2 services** on separate ports on **Linux**.

## PROJECTS

**Gapi: FastAPI-Inspired Web Framework for Go**

Jun 2026 – Jul 2026

Go, net/http, Generics, OpenAPI 3.1, Dependency Injection, CLI | [github.com/gapi-org/gapi](https://github.com/gapi-org/gapi)

- Brought FastAPI's developer experience to **Go** with **zero external dependencies**, using **generics** for compile-time type-safe handlers plus route groups, middleware, and dependency injection on stdlib **net/http**.
- Eliminated hand-written API docs by generating **OpenAPI 3.1** specs and interactive documentation directly from typed handler signatures, with RFC 9457 problem-details error responses.
- Engineered request binding and validation for path, query, header, cookie, and body parameters with custom validators, verified by **43 tests** including fuzz and benchmark suites.

**VaultLens: Local-First AI Memory Engine**

May 2026 – Jun 2026

Electron, TypeScript, SQLite, RAG, Embeddings, Vector Search | [github.com/Kushagra1122/VaultLens](https://github.com/Kushagra1122/VaultLens)

- Made desktop content searchable in natural language, indexing local files into a **SQLite** and **sqlite-vec** vector store with local embedding models via **Ollama** for fully offline retrieval.
- Grounded answers in verifiable sources with a **RAG** pipeline using semantic chunking, metadata extraction, mandatory citations, and task extraction over indexed history.
- Enforced a hard privacy boundary with path canonicalization, symbolic-link escape blocking, and credential-file exclusion, surfaced as per-query privacy receipts and covered by **73 tests**.

## TECHNICAL SKILLS

**Languages** Go, TypeScript, Python, SQL, C++

**Backend** Node.js, NestJS, Express.js, FastAPI, REST APIs, gRPC, GraphQL, WebSockets, OAuth 2.0, SSO, RBAC

**AI & LLM** RAG, AI Agents, MCP, LangChain, LangGraph, Tool Calling, Embeddings, Vector Search

**Systems** Event-Driven Architecture, Job Queues (Celery, BullMQ), Kafka, Redis, PostgreSQL, MongoDB, SQLite

**DevOps** Docker, Kubernetes, AWS (EC2, S3), Azure, GCP, Nginx, Linux, CI/CD (GitHub Actions), Integration Testing

**Frontend** React, Next.js, Material UI, Electron, React Native, Flutter, Swift