

Akhand Pratap Singh

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SKILLS

- **Languages:** TypeScript, JavaScript, Python, SQL, C++
- **Backend:** Node.js, Express.js, FastAPI, REST APIs, WebSockets, BullMQ, Rate Limiting, RBAC
- **Frontend:** React, Tailwind CSS, State Management, Responsive Design
- **Databases:** PostgreSQL, Redis, MongoDB, Prisma ORM, Query Optimization, Connection Pooling
- **Cloud & DevOps:** Docker, AWS, GitHub Actions, CI/CD, Linux, Turborepo, Bun
- **Testing:** Unit Testing, Integration Testing, Jest, bun:test, Code Reviews, Technical Documentation

EXPERIENCE

Exanor | Backend Engineering Intern

Apr 2026 – Jul 2026 | Hybrid

- Contributed to the design and development of end-to-end fullstack systems powering critical internal workflows and core platform capabilities.
- Built the core CMS backend using **TypeScript** and **PostgreSQL**, designing relational schemas, REST APIs, and database indexes for a multi-author content platform.
- Participated in technical decision-making for the startup's backend and commerce platform, contributing to API, database, and system architecture discussions.
- Wrote and maintained **unit and integration tests** for backend APIs and core CMS workflows.

PROJECTS

Vecta | Real-Time Multi-Tenant Project Management Platform | [GitHub](#) – [Live](#)

Aug 2026 – Present

- **Multi-Tenancy:** Architected a multi-tenant **PostgreSQL** data model using Prisma 7 with workspace-level isolation, cascading relationships, and audit logging.
- **Real-Time Infrastructure:** Built an event-driven **WebSocket** service with channel-based routing, heartbeat monitoring, and stale connection cleanup for real-time workspace presence.
- **Async Processing:** Implemented background email delivery using **BullMQ** workers backed by **Redis**, decoupling email processing from API requests and enabling asynchronous job processing.
- **Security:** Implemented an atomic sliding-window rate limiter in **Redis** with strike-based lockouts and TTLs; secured sessions using SHA-256 token hashing and **httpOnly** cookies.
- **Cloud & CI/CD:** Built authenticated streaming uploads to **AWS S3** and configured **GitHub Actions** CI/CD for linting, type-checking, and automated tests in a Turborepo/Bun monorepo.

Technologies: TypeScript, Node.js, Bun, Express.js, WebSockets, Prisma 7, PostgreSQL, Redis, BullMQ, AWS S3, Docker, GitHub Actions

Atlas | Knowledge Retrieval Engine | [GitHub](#) – [Live](#)

Jul 2026 – Aug 2026

- **Backend & RAG:** Built an asynchronous document ingestion and retrieval API using **FastAPI**, **PostgreSQL**, and **Qdrant**, supporting source attribution and streaming responses.
- **Hybrid Search:** Implemented hybrid retrieval combining **BM25** and dense vector search with cross-encoder reranking to improve document relevance.
- **Agentic Retrieval:** Orchestrated query rewriting and retrieval using **LangGraph**, with confidence-based handling for low-quality retrieval results.

Technologies: Python, FastAPI, LangGraph, Llama-3, Hugging Face, Qdrant, PostgreSQL, React.js, Docker

FounderFlow | Startup Finance & Fundraising Platform | [GitHub](#) – [Live](#)

May 2026 – Jun 2026

- **Financial Analytics:** Built a scalable financial analytics backend for tracking startup burn rates, runway forecasts, and asset allocations.
- **RBAC Architecture:** Engineered role-based access control with segregated Founder, Investor, and Admin authorization tiers.
- **Funding Workflow:** Designed an investor matchmaking workflow and stage-based funding pipeline using REST APIs and **PostgreSQL**.

Technologies: TypeScript, FastAPI, PostgreSQL, React.js Tailwind CSS, Docker

ACHIEVEMENTS

- Winner of **Centific Premier Hackathon 2.0** in AI System Engineering, Hyderabad.
- Finalist at **Odoo Hackathon 2026** at Odoo India HQ, Gandhinagar.
- Secured **2nd place** among 100+ participants in a Google Developer Group AI competition.
- Solved **400+ algorithmic problems** across LeetCode, GeeksforGeeks, Code360, and CodeChef.

EDUCATION

Lovely Professional University

Bachelor of Technology – Computer Science and Engineering; **CGPA: 7.54**

Punjab, India

Aug 2023 – Present