

Karan Sharma

Almora, Uttarakhand, India

+91 9627379234 | karansharma.workspace@gmail.com | linkedin.com/in/twynixkaran | github.com/karansharmaworkspace

PROFESSIONAL SUMMARY

Computer Science undergraduate at RGIPT applying Machine Learning to condensed matter physics — currently researching muon site detection using physics-informed ML at QM Labs. SIH '25 ISRO Winner and national hackathon finalist with hands-on experience building and deploying multi-agent RAG systems and agentic AI applications. Driven by the intersection of scientific computing and scalable AI.

EXPERIENCE

AI Engineer Intern

May 2026 – Present

DigiTwin Technology

- Fine-tuning LLMs on domain-specific industrial datasets to improve task performance in specialized enterprise workflows.
- Building and optimizing RAG pipelines for industrial use cases, enabling accurate, grounded information retrieval over proprietary knowledge bases.
- Working at the intersection of applied AI and industry, translating research-grade techniques into production-ready systems.

Undergraduate Researcher - QM Labs (Magnetism Lab)

January 2026 – Present

RGIPT, Uttar Pradesh | Lab Credentials

Supervised by Dr. Tathamay Basu, in collaboration with Mr. Sayan Ghosh (PhD Scholar)

- Researching **Muon Sites Detection** by applying data-driven and physics-informed Machine Learning techniques to condensed matter physics.
- Utilizing **Pymatgen** and **PyTorch** to perform complex materials-related calculations and computational modeling.
- Leveraging scientific computing libraries (NumPy, SciPy, Pandas) to analyze physical datasets and optimize material property predictions.

PROJECTS

ZenithSupport AI | LangChain, FAISS, Groq (Llama 3.3 70B), HuggingFace, Streamlit

GitHub | Live Demo

- Built a production-deployed multi-agent RAG system with a **4-agent orchestration pipeline** (Triage, Policy Retriever, Resolution Writer, Compliance) for automated customer support resolution.
- Indexed a **27,000+ word policy corpus across 14 documents** into a FAISS vector store with HuggingFace embeddings; achieved **100% citation coverage** and grounded accuracy across 20 evaluation scenarios.
- Enforced zero-hallucination output via a dedicated Compliance Agent that validates citations at Doc, Section, and Chunk ID level before every response.

VectorTutor | Groq (Llama 3.3 70B), PyMuPDF, SQLite, Streamlit

GitHub | Live Demo

- Developed a live-deployed AI study assistant with **5 specialized agents** (Reader, Flashcard, Quiz, Planner, Chat) operating over a shared SQLite Knowledge Memory Module for session-persistent learning.
- Implemented adaptive MCQ generation across 3 difficulty levels, PDF-grounded Q&A, and personalized revision scheduling from a single document upload.
- Achieved end-to-end agentic architecture where all agents read and write to a common memory layer, enabling cross-agent performance tracking and accuracy analytics.

DRISHTI App | Android, GNSS, IMU Sensor Fusion, YOLOv8 (planned)

GitHub

- Engineered the SIH '25 ISRO winning smartphone collision warning system fusing GNSS and IMU data for cooperative real-time two-wheeler positioning.
- Delivered multi-modal alerts (visual, audio, vibration) with lane safety monitoring and minimum distance tracking; designed architecture for YOLOv8 integration.

EDUCATION

Rajiv Gandhi Institute of Petroleum Technology (RGIPT)

Bachelor of Technology in Computer Science and Design

CSRL (Super 30)

JEE Engineering Preparation

Jais, Uttar Pradesh

August 2025 – Present

Uttarakhand

June 2024 – May 2025

TECHNICAL SKILLS

- **Languages:** Python, C.
- **Scientific Computing:** Pymatgen, NumPy, SciPy, Pandas, PyTorch.
- **AI & Machine Learning:** Physics-Informed ML, LLMs, Agentic AI, RAG Systems, Fine Tuning, Sensor Fusion.
- **Tools & Frameworks:** Streamlit, LangChain, Groq, FAISS, Git, AWS, Rapid Prototyping.

HONOURS & AWARDS

Smart India Hackathon (SIH '25) - ISRO Problem Statement

December 2025

Winner | Ahmedabad

- Led development of “DRISHTI,” a smartphone-based collision warning system for two-wheelers using GNSS and IMU sensor fusion.
- Implemented cooperative positioning and server synchronization to deliver real-time visual, audio, and vibration alerts.
- Designed a solution incorporating lane safety monitoring and minimum distance tracking, with planned YOLOv8 integration.

NIT Rourkela - Innovathon '25

October 2025

National Finalist (Top 15) | Rourkela, Odisha

- Pitched a tech-driven startup solution to a jury of experts, demonstrating strong presentation and business viability skills.

CERTIFICATIONS

- **Building RAG Agents with LLMs** — NVIDIA Deep Learning Institute
- **Fundamentals of Deep Learning** — NVIDIA Deep Learning Institute
- **LangChain for LLM Application Development** — DeepLearning.AI
- **Introduction to Generative AI** — Google Cloud
- **Foundation of Prompt Engineering** — AWS (Amazon Web Services)