

Hemang Joshi

Applied AI Engineer · GenAI & RAG · Computer Vision & OCR · Multilingual AI · Full-Stack AI Systems

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Applied AI Engineer with production experience across generative AI, retrieval-augmented generation, computer vision, OCR, and multilingual systems. Currently leads Multilipi's Government Projects vertical (team of 3–4) while architecting the company's multilingual GEO (Generative Engine Optimization) product line. Prior research internship at ISRO NRSC building large-scale satellite data pipelines. Comfortable owning a system end-to-end — architecture, backend, frontend, deployment, and client communication.

EXPERIENCE

Applied AI Engineer — Multilipi

Jul 2025 – Present

Full-time · Core Product & Government Projects verticals · Team of ~15

Core Product Vertical

- Designed and built Multilipi's complete multilingual GEO architecture — the first such capability in the product — covering schema.org structured-data generation, citation-optimized content for ChatGPT/Gemini/Grok/Perplexity, and LLM-powered FAQ/entity content layers.
- Upgraded the machine-translation pipeline to Gemini, improving translation quality and cutting translation costs by ~40%.
- Built internal LLM tools for schema generation, GEO audit-report generation, and best-practice decisioning; shipped an AI-powered SEO+GEO audit tool used in sales and client onboarding.

Government Projects Vertical — Lead

- Lead a team of 3–4 developers delivering government-contracted AI projects: solution design, sprint planning, code review, and client communication with National Police Academy, Bhashini, and the Bihar Government.
- Delivered 3 government AI projects to production.

Data Engineer Research Intern — ISRO — National Remote Sensing Centre (NRSC), Hyderabad

Feb 2025 – Jun 2025

Research internship

- Built large-scale data pipelines for satellite imagery handling terabytes of data; implemented a Kafka-based pub/sub system for high-throughput satellite data streaming.
- Designed and built a Satellite Data Archival, Monitoring & Notification System on ActivScale object storage (research paper authored, pending formal submission).
- Delivered POCs across: direct-to-memory streaming of large satellite images, ML-based redundant-region classification for image compression, DEM generation from multi-spectral imagery, land-use classification/segmentation, and time-series geospatial modeling.

System Design Engineer (Intern) — Kapaxha Dynamics

Oct 2024 – Dec 2024

Internship

- Designed system architecture for defence-application drone-swarm control; built a custom UDP/TCP protocol achieving near-zero-latency inter-drone communication.
- Implemented YOLO-based leader-drone detection with Kalman-filter tracking for smooth, real-time trajectory following.

SELECTED PROJECTS

NPA Audio Complaint Tracking Platform

Lead Developer · Live

Multilingual (32-language) audio-to-FIR pipeline for the National Police Academy: WebSocket audio streaming → Bhashini speech-to-text → Gemini summarization/entity extraction → FAISS + Sentence-Transformers RAG for BNS legal-section retrieval → auto-filled FIR form.

Stack: Python, Django, React.js, WebSockets, Bhashini AI Cloud, Gemini, FAISS, Sentence-Transformers

Bihar Government Kaithi Script OCR & Digitalization Platform

Project Lead, team of 10 · Active Development

End-to-end OCR pipeline (CRAFT/DBNet detection + CRNN/TrOCR recognition) and Next.js web platform to digitize degraded historical Kaithi-script manuscripts for the Bihar Government and Bhashini.

Stack: Python, PyTorch, TensorFlow, CRAFT, DBNet, CRNN, TrOCR, Next.js, Django, PostgreSQL

Bhashini Live Website Translation Platform

Lead Developer · Live

Real-time translation of any website into any Indian language, with a human-in-the-loop Maker-Checker QA workflow to maintain government-standard translation quality.

Stack: Python, Django, React.js, Bhashini AI Cloud, PostgreSQL

Multilipi Multilingual GEO Optimization System

Architect & Developer · Live

Complete Generative Engine Optimization architecture — schema generation, citation-optimized content, audit tooling — that became a differentiating, sales-driving product feature.

Stack: Gemini, Vertex AI, Django, Python, Schema.org, JSON-LD

Kaithi Annotation & Labeling Platform (congenial-funicular)

Solo Developer · Active Development

Purpose-built annotation tool for polygon-level Kaithi-script labeling with a Maker-Checker review workflow, built after evaluating Label Studio and CVAT for script-specific gaps.

Stack: Next.js, React.js, PostgreSQL, TypeScript

ISRO Satellite Data Archival, Monitoring & Notification System

Co-designer & Developer · Research / POC

Kafka-based archival and monitoring system for petabyte-scale satellite data on ActivScale object storage; co-authored research paper (pending submission).

Stack: ActivScale, Apache Kafka, Python, AWS S3, PostgreSQL

EDUCATION

B.Tech, Computer Science Engineering — AI/ML Specialization

JECRC University, Jaipur · 2021 – 2025 · CGPA 8.2 / 10

Relevant coursework: Machine Learning, Deep Learning, Computer Vision, NLP, Data Structures & Algorithms, Database Management Systems, Operating Systems.

TECHNICAL SKILLS

AI / Generative AI

Generative AI, RAG, Prompt Engineering, NLP, Agentic AI (early)

Frameworks

PyTorch, TensorFlow, HuggingFace Transformers, OpenCV, LangChain, LangGraph

Data & Infra

Apache Kafka, FAISS, Sentence-Transformers, Docker, GitHub Actions, Linux

Languages

Python, JavaScript, TypeScript, SQL, C++

Computer Vision / OCR

Computer Vision, OCR, YOLO, CRAFT/DBNet, CRNN/TrOCR, Kalman Filter

Full-Stack

Django, FastAPI, React.js, Next.js, PostgreSQL, WebSockets

Cloud

Azure (VM, App Service, AI), AWS (S3, EC2), GCP (Vertex AI, GCS), Bhashini AI Cloud

AWARDS & RECOGNITION

- **Smart India Hackathon 2023 — 3rd Rank, National Level** (Software Edition), Team Lead — computer-vision-based micro-vibration analysis for equipment-damage detection using motion amplification.
- **ISRO NRSC Letter of Recommendation** — issued by C. Pradeep, Scientist/Engineer, NRSC, ISRO (June 2025), for the satellite data archival & monitoring project.

LEADERSHIP & COMMUNITY

- **Team Lead, Government Projects Vertical (Multilipi)** — manage 3–4 developers across sprint planning, code review, and delivery tracking for government AI engagements.
- **Team Lead, Smart India Hackathon 2023** — led problem framing, solution design, and prototype delivery under national-hackathon time constraints to a 3rd-place finish.
- **Community Lead, College Tech Community** — organized 3 technical events and served as a community lead within the college developer community.

RESEARCH & PUBLICATIONS

Satellite Data Archival, Monitoring and Notification System in Object Storage — Hemang Joshi, Arushima, ISRO NRSC mentors. Co-designed the system architecture and implemented the data pipeline and monitoring system; co-authored the paper. Written, pending formal submission.

LANGUAGES

Hindi (Native) · English (Professional Working Proficiency)