Abhimanyu Singh

Data Scientist (Manager) | Agentic AI Specialist | Robotics Engineer

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SUMMARY

Highly skilled **Data Scientist Manager** and **AI Engineer** with **4+ years of industrial experience** in designing robust data pipelines, **Agentic AI** systems, and advanced analytics. Possesses an additional **2 years of research experience** in Computer Vision and Robotics. Currently leading GenAI initiatives at **HDFC Bank**, focusing on autonomous agent catalogues and MLOps. Adept at bridging the gap between research innovation and production-grade software engineering to deliver scalable, high-impact solutions.

TECHNICAL SKILLS

Generative AI & Agents: Google ADK, OpenAI SDK, LangChain, LlamaIndex, LangGraph, LiteLLM, CrewAI, RAG, Vertex AI
Cloud & MLOps: AWS (SageMaker, ECR), GCP, Docker, HashiCorp Vault, MQTT, MLFlow, Airflow
Languages: Python, SQL, C++, Dart (Flutter), JavaScript, LaTeX
Frameworks: FastAPI, Flask, Streamlit, TensorFlow (TFLite), OpenCV, ChromaDB, PostgreSQL, MongoDB

EXPERIENCE

HDFC Bank — Dec 2025 – Present
Data Scientist - Manager — *Noida, India*
- Developing the **Agent Catalogue** for the Neev platform, abstracting low-level **LiteLLM** routing into a card-based UI, enabling teams to discover and configure autonomous agents without raw config files.
- Built a Streamlit-based MLOps dashboard for **data annotation**, facilitating internal crowdsourcing to generate labeled datasets for fine-tuning and RAG applications.

Quantiphi Analytics Solutions — Sep 2025 – Nov 2025
Senior Machine Learning Engineer — *Bengaluru, India*
- Executed a large-scale POC using **GCP Vertex AI Document OCR** for batch processing, converting unstructured financial documents into structured JSON for downstream analytics.

Alphadroid India Ltd — Jun 2024 – Sep 2025
Software Engineer (AI & Robotics) — *Noida, India*
- Orchestrated autonomous robot workflows including synchronization with **Lift PLC** systems and a **GeoJSON**-based app for real-time multi-floor navigation.
- Optimized **Conversational AI** pipelines using **LangChain** and AWS SageMaker, enhancing RAG context classification for multilingual customer support avatars.
- Transitioned facial recognition to edge devices using **Flutter** and **TFLite** (Google ML Kit), optimizing MobileFaceNet for 99.5% accuracy with quantization.
- Scaled robot updates via **MQTT** and managed AWS ECR logins with HashiCorp Vault.

IIT Guwahati (TIH Foundation) — Jun 2023 – May 2024
Junior Research Fellow (Underwater Vision Enhancement) — *Pune, India*
- Developed pipelines using **GroundingDINO** (zero-shot detection), improving underwater surveillance dataset quality (PSNR/SSIM) by 35%.
- Optimized inference using **ONNX Runtime**, reducing latency by 3-4 seconds for real-time tracking.

Health View — Jul 2019 – Jul 2021
Data Scientist — *Jaipur, India*
- Developed NLP-driven content curation models and D3.js dashboards to boost user engagement.

PROJECTS

HealthBuddy - AI Wellness Companion | *Flutter, Groq API, Health Connect* — Jan 2026
- Developed a privacy-first health app integrating **Google Health Connect** to sync steps, sleep, and heart rate.
- Built **NutriGPT**, a conversational AI using **Groq API** (Llama 3) for low-latency wellness advice.
- Implemented a "Bring Your Own Key" (BYOK) architecture for secure, personalized AI interactions.

Resume JD Matcher | *Python, Gemini 2.5, LangChain, Streamlit* — 2025
- Engineered an AI recruitment tool using **Gemini 2.5 Flash** for skill extraction and TF-IDF scoring.
- Automated PDF parsing and generated dynamic radar charts for candidate evaluation using Plotly.

EDUCATION

Defence Institute of Advanced Technology (DIAT), DRDO   2021 – 2023
M.Tech in Automation and Robotics Engineering; CGPA: 8.47   *Pune, India*
The LNM Institute of Information Technology   2015 – 2019
B.Tech in Mechanical Engineering; CGPA: 8.16   *Jaipur, India*

PUBLICATIONS

Article: "The Evolution of Object Detection: YOLO & NAS Revolutionizing Computer Vision" (IndiaAI.gov.in)
Conference: "Subaqueous Crack Detection using Fusion-Based Image Enhancement" (RCRM 2024)