

TARKESHWAR NARAYAN SHARMA

Senior AI/ML Engineer | Generative AI & LLM Specialist | RAG Systems Expert

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Professional Summary

Senior AI/ML Engineer with 8.5 years **designing → training → shipping production models at enterprise scale**. Key wins: **+43% engagement boost, 7.5% conversion uplift, \$420K+ cost savings through intelligent automation**. Expert in Generative AI, RAG systems, and multilingual NLP **with proven track record leading cross-regional teams**. Seeking Principal AI Engineer role to **architect next-generation AI systems that drive \$50M+ business impact**.

Technical Skills

- 🔥 **Core AI/ML:** Python, PyTorch, TensorFlow, Scikit-learn, MLOps, Deep Learning, Computer Vision, NLP
- 🚀 **Generative AI:** LLMs (GPT, Claude, LLaMA, Gemini), RAG, Prompt Engineering, Vector Databases, AI Agents
- ⚡ **Emerging Stack:** LangChain, LlamaIndex, Strands, MCP, Hugging Face, OpenAI APIs, Cohere v3, FAISS
- ☁️ **Cloud & MLOps:** AWS (SageMaker, Bedrock, Lambda), Databricks, Apache Spark, MLflow, Docker
- 🔧 **Frameworks & Tools:** FastAPI, YOLO, spaCy, Spark NLP, ChromaDB, PostgreSQL, MongoDB
- 👥 **Leadership:** AI Project Management, Stakeholder Management, ML System Design

Experience

Topsource Worldwide

Senior Data Scientist

November 2023 – Present

Remote, India

- **Intelligent Logistics with AI Agents** - Architected **AI-powered logistics platform** using **MCP agents & Strands framework**, implementing **intelligent job assignment algorithms** that automate **delivery coordination** and **optimize driver efficiency**. Integrated **Mapbox APIs** for **real-time traffic analysis** enabling **dynamic route optimization & proactive prediction**. Led **5-person development team** building **FastAPI backend**, scaling system to handle **100+ concurrent jobs** through **agentic workflow architecture** and **intelligent scheduling automation**.
- **Multilingual Enterprise RAG Chatbot for DEWA** - Led **multilingual chatbot development** for **DEWA enterprise** using **Claude 3 & Cohere v3** embedding models. Integrated **AWS SageMaker, Lambda & SharePoint** for **Arabic/English document processing**. Pioneered **advanced prompt engineering** and implemented **performance analytics dashboard**, collaborating with **Middle East stakeholders** for **enterprise-grade RAG architecture** delivering **optimized response accuracy** across **multilingual queries**.
- **Generative AI-Powered Airline Dynamic Pricing System** - Directed **cross-regional teams** across **North America, Europe & Asia**, engineering **AI-powered dynamic pricing system**. Designed **multi-agent architecture** with **autonomous agents** for **real-time price adjustments, market analysis & revenue forecasting**. Integrated **competitor pricing, demand patterns & seat inventory data**, enabling **automated price recommendations** that **significantly enhanced airline revenue optimization** through **intelligent algorithmic decision-making**.
- **Multilingual Spell Correction System for Quick Commerce** - Architected **RAG-enhanced spell correction system** using **Llama3-8B & Databricks**, implementing **semantic retrieval** with **Vector DB & ANN search**. Engineered **two-stage architecture** with **instruct fine-tuning**, reducing **token count by 40%** while improving **inference latency by 18s** for **1000-query batches**. Deployed **production-scale solution** handling **vernacular phonetic inputs**, achieving **7.5% conversion rate increase** through **intelligent multilingual query understanding**.

Statusneo

Consultant- Data Scientist

June 2021 – November 2023

Gurugram, India

- **AVA Tracking System - Computer Vision Application** - Managed **end-to-end development** of **sophisticated computer vision application** deployed for **global clients**. Led **multi-disciplinary team** designing **real-time object detection** using **YOLO model** for **logbook & starter pack detection**. Ensured **seamless deployment** across **different operational**

environments, collaborating with diverse stakeholders to enhance operational efficiency through advanced computer vision and intelligent tracking capabilities.

- **Personalized News Recommendation System - News Platform** - Built personalized recommendation system using entity recognition & knowledge graphs for content relevance improvement. Integrated trending news summaries with real-time recommendation engine, boosting user engagement & interaction across News platform. Optimized recommendation algorithms for real-time updates, significantly increasing user retention metrics and content interaction through intelligent personalization and dynamic content delivery for enhanced user experience.
- **Custom Sentiment Analysis Model for Streaming Platform**- Developed custom sentiment analysis model supporting multiple languages for large streaming company. Trained deep learning models on diverse datasets for audience sentiment classification & content strategy optimization. Implemented real-time sentiment tracking and optimized content recommendation algorithms using sentiment insights, improving viewer retention & platform engagement through enhanced user personalization and intelligent content delivery across streaming platform.
- **AI-Powered HR System with Talent Management** - Designed internal HR system with skill extraction & JD-CV matching for talent database management. Built NLP-based resume parsing module enabling automated candidate-job matching & recruitment optimization. Improved talent acquisition efficiency through AI-driven analytics for skill-gap identification & workforce planning, streamlining recruitment workflows and enhancing hiring decision-making through intelligent candidate matching and automated talent assessment across organizational departments.

Ayurs Infotech Pvt Ltd

Senior Data Analyst

March 2017 – January 2021

New Delhi, India

- **Large-Scale Image Matching using Vector-Search** - Led team development of image matching system, enhancing retrieval accuracy by 30% using advanced vector-search algorithms. Implemented efficient vector search across massive datasets, creating scalable solution for image-based applications. Optimized search algorithms significantly reducing search times and improving user experience, delivering high-performance image retrieval through intelligent vector matching and scalable architecture for production deployment.
- Pioneered recommendation engine, boosting engagement by 43% and driving user retention and sales
- Developed NLP model for semiconductors, cutting costs by 42% through streamlined ticket management
- Built data science pipeline, streamlining processes and improving decision-making across the organization
- Developed NLP chatbots and led data-mining, forecasting retail sales with predictive analytics
- Spearheaded semantic search, enhancing product relevance by 32% and reducing query latency

Teaching & Mentorship Experience

- **Generative AI Mentor | Analytics Vidhya** (Remote, Gurugram) | Nov 2023 – Nov 2024 - Mentored students in GenAI Pinnacle & AI BlackBelt Plus Programs, implementing state-of-the-art AI models for real-world problems
- **Data Science Instructor | Skillovilla** (Remote, Bengaluru) | Feb 2023 – Apr 2023 - Led hands-on workshops on deep learning & ML, helping students apply data science concepts to industry problems
- **Engineering Mathematics and Statistics Tutor | Self-Employed** (Bhopal) | Jul 2014 – Feb 2017 - Provided tutoring in engineering mathematics & statistics, helping students build strong foundational problem-solving skills.

Academic & Co-Curricular Achievements

- **Top 10 Winner of AWS Generative AI Innovation Center Partner Alliance Innovation MCP Hackathon | 2025**
- **Top 20 Rank Holder at RGPV University** for excellent academic performance | 2014

Education

RGPV University

Bachelor of Science in Electrical and Electronics Engineering

June 2010 – June 2014

Bhopal, Madhya Pradesh