Ravi Kumar Verma

Data Scientist | Gen AI Solution Architect

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Data Scientist with 7+ years of experience specializing in Generative AI, LLMs, and multi-agent systems. Expert in NLP, prompt engineering, and building intelligent chatbots using vector DBs like Pinecone and Chroma. Proven track record of deploying AI-driven solutions across Finance, Healthcare, and Supply Chain domains.

Key Skills

Programming	Python, PySpark
Machine Learning & Deep Learning	Machine Learning, Deep Learning, Classification, Regression, Clustering, CNNs, XGBoost, Random Forest, Decision Tree, GAN, VAE, Diffusion Model
Natural Language Processing & GenAI	NLP, Generative AI, Agentic AI, LLMs (GPT-4, Gemini, Claude, Mixtral, LLaMA, OpenAI), Prompt Engineering, RAG, LlamaIndex, LlamaParse, Whisper, Hugging Face Transformers, Docling
Frameworks & Libraries	LangChain, LangGraph, FastAPI, Django Rest Framework (DRF), Pandas, Numpy, Matplotlib, Seaborn, NLTK, Apache ECharts, Plotly, Scikit-learn, TensorFlow, PyTorch
Chatbots & Agents	Multi-Agent Systems, Chatbot Development, LangGraph Subgraphs, Supervisor Agent, SQLAgent, PandasAgent
Data Engineering & Databases	SQL, PostgreSQL, MySQL, MongoDB, Redis, CQL, Vector Databases (Pinecone, Chroma, FAISS)
Cloud & DevOps/ MLOPS	AWS (EC2, S3, SES), Azure (Databricks, Datalake), GCP (BigQuery, Document AI), Docker, Kubernetes, CI/CD, Langsmith, MLFlow
APIs & Tools	Postman, Swagger, Git, JIRA, Confluence, OAuth 2.0, JWT Authentication, CallbackManager
Visualization & Reporting	Tableau, PowerBI, Streamlit, Summary Dashboards, Forecasting Charts, KPI Analytics

Professional Experience

Data Scientist | Gen AI Solution Architect

Xaigi Technology, Noida   *January 2024 - Present*

As a Project Lead and Generative AI Architect, I lead the development of AI-driven solutions, manage cross-functional teams, and design intelligent agent-based systems. My focus is on building scalable architectures using LLMs and multi-agent frameworks to automate financial workflows and enhance decision-making.

- Designed a multi-processor, multi-gateway onboarding platform, integrating acquiring banks and payment systems with robust architecture.
- **Led a 15-member team** to build autonomous agents for financial insights across QuickBooks, WooCommerce, and file-based sources, expanding tool coverage by 400%.
- **Secured 2 enterprise projects** through a LangChain-based GenAI demo showcasing real-time multi-source financial chat and **fully autonomous agent like Manus**.
- Improved model accuracy from **55% to 94% and cut latency by 60%** via prompt optimization, memory management, multi-tool orchestration, and synchronized multi-agent design.
- Delivered scalable, production-ready solutions using Docker, AWS, REST APIs, and CI/CD pipelines for seamless enterprise deployment.

Data Scientist
Ericsson , Noida   *December 2021 - December 2023*

As a Data Scientist, I developed scalable machine learning and NLP solutions to enhance telecom operations and customer experience. I focused on processing large-scale data, deploying models in production, and driving insights through automated analytics pipelines.

- Built a PySpark-based batch ETL pipeline on GCP to process ~**1M rows every 15 minutes** using Argo Workflows for real-time telecom data analytics.
- Applied NLP on NPS feedback to identify pain points and improve service quality, resulting in targeted experience enhancements.
- Reduced equipment maintenance costs by 30% by identifying chronic failure sites using **K-Means clustering**, minimizing field engineer visits.

Data Scientist
ATCS (Naggaro) , Jaipur   *July 2018 - November 2021*

As a Data Scientist, I built predictive models and intelligent systems to improve service operations, optimize maintenance workflows, and support data-driven business decisions. I also mentored junior team members and collaborated with stakeholders to align analytics with strategic goals.

- Developed a predictive maintenance solution using telematics data, resulting in a **500% increase in service call volume and 2× boost in conversions.**
- Built a hybrid (rule-based plus NLP based) repair package system to accurately match faults with service plans, reducing **false claims** from dealers.
- Applied NLP techniques for extracting key contract terms from unstructured service manuals, streamlining **service contract analysis.**
- Worked closely with stakeholders to design tailored analytics strategies and performance measurement frameworks.
- Provided mentorship and technical guidance to junior data scientists, improving team efficiency and model deployment standards.

Junior Telecom Officer(JTO)
Bharat Sanchar Nigam Limited, Gujarat   *May 2010 - June 2016*

As a JTO, I was responsible for managing telecom operations, maintaining infrastructure, and ensuring uninterrupted network services across rural and urban regions. I also oversaw ERP-driven inventory operations and led customer service excellence initiatives.

- **Managed 12 rural and 1 urban telephone exchanges**, ensuring continuous telecommunication services across the district.
- **Maintained 3G and BTS towers for optimal uptime**, reducing service interruptions and improving customer satisfaction.
- **Led the district-level BSNL store**, handling inventory operations and ERP maintenance for seamless stock tracking and distribution.
- **Achieved the highest sales in the Jamnagar region** through exceptional leadership at the BSNL Customer Service Center.
- Implemented network upgrades and troubleshooting protocols, significantly improving service reliability and reducing downtime

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Projects

Conversational AI for Finance and Accounting | Multi-Agent Flow   **Jan 2024**

Designed and led development of a multi-agent conversational AI system using Python, LangChain, and LangGraph, integrated with platforms like **QuickBooks, WooCommerce, Shopify, and Authorize.net.**

- Built 50+ LangChain tools and workflows enabling 90% automation of financial queries and reporting tasks.
- Achieved 400% tool coverage expansion, improved model accuracy from 55% to 94%, and reduced latency by 60% via prompt optimization and memory management.
- Integrated SQL/Pandas agents, document chat (PDF/CSV), and forecasting tools (Prophet + Apache ECharts) for real-time financial insights.
- Deployed scalable Dockerized architecture on AWS with REST APIs, CI/CD, Pydantic validation, and full observability using CallbackManager.
- Collaborated with finance and product teams to ensure data quality, compliance, and successful enterprise integration

Technology   *Python, LangChain, LangGraph, OpenAI (GPT-4), LlamaParser, SQLAgent, PandasAgent,Vector DBs, JIRA, Confluence, FastAPI*

AI-Driven Merchant Onboarding Platform   **Jan 2024**

Led the development of a Generative AI–powered onboarding system to streamline merchant registration across multiple payment processors and gateways.

- Conducted in-depth domain research to address onboarding and transaction challenges, managing the full project lifecycle from design to deployment.
- Implemented rapid onboarding with GenAI, reducing form-filling time from several minutes to just a few seconds via intelligent autofill and adaptive question flows.
- Designed a modular onboarding framework that matches merchants to optimal payment processors based on business type and risk profile.
- Integrated multi-gateway support with features including payment links, QR codes, virtual terminals, and online checkout APIs.
- Enabled dynamic onboarding workflows for Authorize.net, FreedomPay, and other processors, like Elavon improving partner integration efficiency.
- Improved merchant activation speed and reduced operational overhead through automated document processing and smart routing logic.

Technology   *Python, LangChain, FastAPI, LlamaParser,Pydantic, JIRA, Confluence*

NPS-Based Topic Classification for Service Quality Improvement   **Apr 2022**

Led the development of a topic classification system using customer NPS feedback to enhance service experience in the telecom domain.

- Applied LDA (Latent Dirichlet Allocation) to identify key themes and concerns from sentiment-rich feedback data.
- Developed a sentiment analysis pipeline to correlate classified topics with service issues, enabling targeted quality improvements.
- Delivered actionable insights through a Tableau dashboard, empowering stakeholders with real-time feedback analysis for decision-making.

Technology   *Pyspark, Python, Argo-flow, Latent Dirichlet Allocation (LDA), Tableau*

Predictive Service Reminder System for VECV   *Aug 2020*

Led the development of a data-driven service reminder platform for VECV, integrating ML and statistical modeling to automate service planning and boost customer engagement.

- Built a predictive model using historical telematics data to forecast scheduled service intervals, improving task management and reducing manual workload.
- Automated calling list generation, service categorization, and customer preference mapping, leading to more personalized and timely service delivery.
- Enhanced customer relationship executive (CRE) productivity and service uptime by eliminating manual outlier detection through advanced profiling.
- Resulted in a 500% increase in service call volume and 2× conversion rate improvement, driving higher engagement and revenue growth.
- The project's success led to expansion into Bangladesh and Nepal, making it a strategic deployment across international markets.

Technology   *Python , Z-score, Docker, Kubernetes*

Repair Package Recommendation System for Daimler   *Aug 2018*

Developed a machine learning–driven recommendation engine to standardize vehicle repair quality and streamline claims processing across workshop dealers

- Leveraged historical claim data to suggest optimal repair packages, ensuring consistent pricing and uniform service quality across dealers.
- Reduced false claim submissions and accelerated claim clearance, enhancing overall operational efficiency.
- Following initial success, the solution was scaled across multiple markets, becoming a key asset in Daimler's service network.

Technology   *Python, NLP*

Other Minor Projects & POCs   *July 2018- May 2025*

- **Autonomous Agent like 'Manus'**: Built a lightweight autonomous GenAI agent prototype for conversational automation using multi-agent workflows and task routing.
- **Offline Text Extraction for Machinery Parts:** Developed an ML Kit–based OCR pipeline to extract text from machinery part labels and manuals without internet connectivity, enabling offline mobile-based inference.
- **Real-Time Telematics – Vehicle Stoppage Detection:** Used Kafka Structured Streaming to identify stoppage points in commercial vehicles from real-time GPS and telematics data, supporting logistics optimization.
- **Chronic Site Maintenance Optimization:** Analyzed telecom data to detect chronic failure sites and recommend preventive maintenance actions, reducing repeat failures and operational costs.
- **Twitter Sentiment Analyzer:** Built an NLP pipeline to analyze sentiment around products using tweets, including word frequency, word cloud visualization, and sentiment scoring.
- **Fashion GPT** – Indian Ethnicwear Assistant: Created a GenAI-driven fashion assistant tailored for Indian ethnicwear, capable of answering queries, suggesting combinations, and summarizing outfit trends.
- **Segmentation & Churn Prediction for Leasing:** Built a dynamic rule-based recommender using K-means clustering and models like Decision Tree and XGBoost, increasing sales by 30%. Developed an additive scoring system to support targeted marketing.
- **Fraudulent Claim Detection:** Engineered a rule-based audit tool to detect anomalies in equity claim data using Z-Score, Apriori algorithm, and association rules. Integrated NLP-based text extraction to flag mismatches in service manuals, improving audit quality and claim validation.

Education

IIT Roorkee, Uttarakhand Part Time Phd
Mechanical & Industrial Engineering Department, IIT Roorkee,

2025- Cont.

IIT Roorkee, Uttarakhand M.Tech in Solid State Electronics Materials,
Department of Physics, IIT Roorkee,

2016-2018

UIET, CSJM University Kanpur, Uttar Pradesh
B.tech in Electronics & Communication Technology

2005 - 2009

Certifications

Dataiku   *Core Designing Certificate*

Dataiku   *ML Practitioner Certificate*

Ericsson BCSS   *BCSS Machine Learning - Experienced level Assessment*

Udemy   ChatGPT Masterclass- Build Solution and apps with ChatGPT

Research Publication

Diameter and gap controlled fabrication of periodic SiMW/SiNW arrays: A broadband absorber for high efficiency silicon solar cell (Elsevier)

Soft Skills

- Analytical Thinking
- Problem-Solving
- Effective Communication
- Leadership
- Team Collaboration
- Time Management

- Adaptability
- Presentation Skills
- Creativity and Innovation
- Organizational Skills
- Attention to Detail
- Teamwork

- Stakeholder Management
- Continuous Learning
- Data-Driven Decision Making
- Ethical Responsibility
- Strategic Thinking
- Client-Focused Approach