

# VIVEK KUMAR

## Senior Data Scientist | Generative AI Specialist

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### PROFESSIONAL SUMMARY

Results-driven Senior Data Scientist with **7+ years of expertise** in Generative AI, Machine Learning, and MLOps. Proven track record of delivering high-impact AI solutions that drive operational efficiency and cost reduction. Specialized in Large Language Models (LLMs), Retrieval-Augmented Generation (RAG), and multi-agent architectures. Successfully led cross-functional teams to deploy scalable AI systems across telecommunications and analytics domains.

### CORE COMPETENCIES

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## Programming & Development

- Python (Advanced)
- SQL
- Statistical Modeling
- MLOps
- MLflow
- DVC
- CI/CD
- Docker
- Git



## Generative AI & ML

- Large Language Models
- RAG
- LangChain
- LlamaIndex
- PyTorch
- TensorFlow
- Keras
- Scikit-learn
- XGBoost
- NLP



## Agentic Frameworks

- LangChain Agents
- Crew.AI
- AutoGen
- OpenAI Function Calling
- Multi-Agent Architecture
- Task Decomposition
- Memory Management



## Cloud & Visualization

- Azure
- GCP
- AWS
- Power BI
- Tableau
- A/B Testing
- Anomaly Detection
- Predictive Modeling



# PROFESSIONAL EXPERIENCE

## Senior Data Scientist

Fractal Analytics, Gurgaon

Nov 2023 - Present

- ▶ **Architected and deployed** advanced predictive models using state-of-the-art machine learning algorithms, resulting in 25% improvement in model accuracy
- ▶ **Collaborated with cross-functional teams** to streamline data processing workflows, reducing processing time by 40%
- ▶ **Delivered data-driven solutions** that enhanced decision-making capabilities and operational efficiency across multiple client engagements
- ▶ **Mentored junior data scientists** on best practices in ML model development and deployment

## Data Scientist

Ericsson, Noida

Nov 2021 - Oct 2023

- ▶ **Led AI model development initiatives** to enhance customer experience and operational efficiency for telecommunications clients
- ▶ **Designed and executed A/B testing strategies** that improved user experience metrics by 30%
- ▶ **Automated data classification workflows** using NLP techniques, reducing manual effort by 60%
- ▶ **Created interactive dashboards** and visualization tools for stakeholder reporting and decision support

## Data Scientist

Milliman, Gurgaon

Apr 2020 - Oct 2021

- ▶ **Performed comprehensive statistical analyses** driving actionable insights and operational strategy improvements
- ▶ **Built interactive dashboards** using Power BI and Tableau to support data-driven decision making
- ▶ **Developed predictive models** for risk assessment and actuarial analysis in insurance domain

## Software Engineer

Conduent, Gurgaon

Sep 2018 - Mar 2020

- ▶ **Utilized SQL and Python** for large-scale data manipulation, analysis, and ETL pipeline development
- ▶ **Conducted statistical analyses** that enhanced customer experience and operational metrics
- ▶ **Implemented data quality frameworks** ensuring 99.5% data accuracy across processing pipelines



## KEY PROJECTS & ACHIEVEMENTS

### 1. Billing SLM: AI-Powered Customer Billing Solution | Verizon

- ▶ **Fine-tuned Phi-3.5-mini model** using Supervised Fine-Tuning (SFT) to resolve customer billing queries from complex JSON data
- ▶ **Automated bill summary generation** and structured data creation using BigQuery, improving processing efficiency by 50%

- ▶ **Standardized diverse billing formats** for efficient LLM training and inference across multiple systems
- ▶ **Reduced context length by 50%**, significantly improving response speed and model efficiency

**Impact: Achieved 85%+ accuracy on contextual billing Q&A, improved query response time, and reduced operational costs**

**Technologies: Phi-3.5-mini, Gemini Flash, Python, GCP, JSON, SFT**

## **2. Network Genie: Generative AI Platform for Field Engineers | Verizon**

- ▶ **Developed a comprehensive AI platform** for field engineers and executives to streamline information retrieval and enhance operational efficiency
- ▶ **Designed and implemented RAG system** for generating contextually relevant responses to technical and executive queries
- ▶ **Built multiple specialized agents** for different data sources, optimizing query routing and response accuracy
- ▶ **Reduced system latency by 30%** through optimized retrieval processes and caching mechanisms

**Technologies: GPT-3.5-turbo, BAAI/bge-small-en-v1.5, Python, LangChain, FAISS**

## **3. Reliability: Anomaly Detection for Sensor Data | C3 AI**

- ▶ **Designed and implemented autoencoder models** to accurately reconstruct sensor data addressing high-dimensional, noisy, and missing data challenges
- ▶ **Achieved 25% reduction in false positives** compared to traditional anomaly detection methods
- ▶ **Enhanced sensor network reliability** by reconstructing missing or corrupted sensor readings with 95% accuracy

**Technologies: TensorFlow, Keras, PySpark, Python**

#### 4. Intelligent Field Work-Order Optimization | Ericsson

- ▶ **Developed predictive models** to optimize operational costs by intelligently prioritizing relevant work orders
- ▶ **Leveraged advanced NLP techniques** for analyzing unstructured text data, resulting in 35% cost savings
- ▶ **Improved operational efficiency** by reducing work order volumes through data-driven prioritization strategies



## EDUCATION

### Master of Science (MSc) in Financial Engineering

WorldQuant University | Expected Apr 2027

## Post Graduate Diploma (PGDM) in Business Analytics

Alliance University, Bangalore | Completed Jan 2022

## Post Graduate Program (PGP) in Data Science

Springboard, Bangalore | Completed Nov 2020

## Bachelor of Technology (B.Tech) in Computer Science & Engineering

IMS Engineering College | Completed Jun 2017



## CERTIFICATIONS



**Machine Learning Advanced  
Level - Ericsson**



**Building End-to-End  
Generative AI Applications -  
Analytics Vidhya**



**Building Production-Ready  
RAG Systems Using LlamaIndex  
- Analytics Vidhya**



**Machine Learning  
Experienced Level - Ericsson**



**Building LLM Applications  
Using Prompt Engineering -  
Analytics Vidhya**



## AWARDS & RECOGNITION



**Patent Granted: "Operation Prediction in Wireless Communication Network"**



**Star of the Month Award for outstanding contributions to AI/ML projects**



**Successfully led 15+ high-impact AI and machine learning projects across telecommunications and analytics domains**



**Recognized for developing scalable and efficient data science solutions that drove business value**



## TECHNICAL KEYWORDS



*Machine Learning • Artificial Intelligence • Deep Learning • Natural Language Processing • Large Language Models • Generative AI • RAG • LangChain • Python • SQL • TensorFlow • PyTorch • MLOps • Cloud Computing • Data Science • Predictive Analytics • Anomaly Detection • Statistical Modeling • A/B Testing • Data Visualization*