# Abhishek Singh

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## PROFILE SUMMARY

Applied Machine Learning Engineer with hands-on experience in designing, training, deploying, and monitoring end-to-end machine learning and GenAI systems. Strong proficiency in Python, ML/DL frameworks, MLOPs practices, and LLM-based architecture (RAG), with demonstrated ability to build scalable, production-ready AI solutions for real-world applications. Experienced in developing end-to-end ML pipelines, performing feature engineering and model evaluation, and integrating CI/CD containerization, and monitoring.

## EDUCATION

**Bachelor of Technology,** GLA University, Mathura **2019 – 2023**

**Master of Technology,** Bennett University, Greater Noida **2024 – 2026**

## EXPERIENCE

**L2 Data Analysis, DCS** **Aug 2023 – Feb 2024**

- Led hands-on machine learning project development and technical mentorship, guiding 50+ engineers through real-world ML workflows using **Python**, **Pandas**, **NumPy**, **Scikit-learn**, and **TensorFlow**.
- Executed hands-on ML workflows on algorithms, feature scaling, and model evaluation, improving model performance by 35%.
- Analyzed sensor data from Thing Worx for a smart EV project, generating insights that improved system performance.

## INTERNSHIP

**Data Analysis and Machine learning Intern,** Ineuron **Dec 2023 – Jan 2024**

- Designed and deployed a data-driven web application for restaurant performance analytics, identifying high-impact parameters affecting ratings and delivering actionable business recommendations.
- Optimized predictive accuracy using regression and ensemble learning models, applying rigorous feature engineering and automated pipelines for continuous integration and deployment on large-scale (2 GB) datasets.
- Tools used: Python, sklearn library, EDA, MongoDB and production-ready ML workflows enhancing data-driven decision-making.

## LIVE-PROJECTS

**Flight Price Prediction in MLOPS**

- Architected, deployed a production-grade flight price prediction system leveraging regression and ensemble algorithm, achieve 94% accuracy. Built and maintained end-to-end ML pipeline from data ingestion to production deployment, include monitoring.
- Engineered and tuned advanced ensemble learning models through feature engineering and hyperparameter tuning.
- Implemented full MLOps workflows by integrating CI/CD pipelines, Docker-based containerization, automated deployment, monitoring on **Azure**, and version control to ensure reliable and scalable ML model operations.
- Tools used: Python, Scikit-learn, Pandas, NumPy, NoSQL, Docker, Jenkins, Model Evaluation, Azure cloud.

**Satellite scene image classification**

- Engineered a **Vision Transformer (ViT)** architecture surpassing CNN benchmarks in complex geospatial scene understanding and pattern recognition. Enhanced model performance using **skull stripping, intensity normalization, and augmentation**
- Implemented **attention-based feature extraction** and advanced normalization to boost model generalization.
- Achieved **>92% accuracy** using transformer-based architectures with scalable real-time deployment

**Restaurant Analysis**

- Conducted in-depth Exploratory Data Analysis (EDA), SQL query, visualization on large-scale restaurant datasets to uncover operational patterns, customer behavior trends, and performance drivers, enabling data-driven business optimization
- Applied feature engineering, correlation and hypothesis testing to quantify key drivers of restaurant ratings and customer satisfaction, enabling improved predictive modeling and actionable insights for service quality enhancement

**RAG System for Document Question Answering**

- Designed scalable **production-grade Retrieval Augmented Generation (RAG) pipeline** enabling intelligent question answering through automated PDF ingestion, text chunking, and semantic embedding generation.
- Developed a **hybrid retrieval framework** by integrating **BM25 keyword search** with **FAISS-based vector similarity**, improving contextual relevance and response accuracy.
- Engineered a **custom ranking and score fusion mechanism** to balance lexical and semantic signals for optimal top-K document selection.
- Designed a **modular, scalable NLP architecture** with prompt engineering and LLM orchestration.

## CERTIFICATIONS

- Data Analysis with Python – freeCodeCamp
- Machine Learning Specialization – Coursera
- Ineuron – Data Science with Model Deployment
- Deep Learning with TensorFlow – DeepLearning.AI
- Ekeeda – Data Science
- Simplilearn – Introduction to Data Analysis

## KEY SKILLS

**Technical Skills:** Data Analysis, Machine Learning, Deep Learning, NLP, SQL, Python, Clustering, Data Visualization, LLM, RAG , Azure

**Soft Skills**: Team Leadership, Collaboration, Effective Communication, Critical Thinking, Problem Solving, Adaptability