

Vishal Patel

Canada | vishubpatel4@gmail.com | +1 6478963270 | [LinkedIn](#) | [GitHub](#)

Data Scientist with 3+ years in ML, data analytics, and NLP, excelling in personalized recommendations, sentiment analysis, and scalable model building. Expertise in Python, SQL, AWS, and advanced AI solutions, with a 25% improvement in forecasting accuracy and a 40% boost in email generation speed.

Technical Skills

- **Programming languages:** Python, R, C++ (OOPS).
 - **Data Visualization:** Tableau, Power BI, Matplotlib, Seaborn
 - **Machine learning:** scikit-learn, TensorFlow, PyTorch, Hugging Face, NLTK, Transformers, MLflow.
 - **Data Engineering:** EDA, data wrangling, data augmentation, web scraping.
 - **Generative AI:** RAG models, LLMs, vector embeddings, chatbot development, fine-tuning LLMs.
 - **Cloud Platforms:** AWS, GCP, Docker, Git, GitHub, CI/CD
 - **Databases:** SQL, MongoDB, Vector DBs (Pinecone, ChromaDB)
 - **Web Technologies:** HTML, CSS, JS, Docker, Flask, Streamlit, Kubernetes, FastAPI, Jira
 - **Soft skills:** analytical thinking, communication, collaboration, adaptive learning.
-

Work Experience

Machine Learning Intern, Cherukuru Technologies & Consulting Limited, Toronto, ON

Immigration RAG-Based AI Chatbot (09/2023–02/2024)

- Engineered a high-performance **RAG** chatbot using Llama2 7B with **LangChain** for advanced prompt engineering and **Pinecone DB** for efficient vector storage. Applied NLP and regex for comprehensive text processing and data integration.
- **Optimization:** leveraged MLflow and AWS SageMaker for scalable deployment, achieving a **22%** increase in processing speed and an **18%** capacity boost.
- **Business Impact:** Streamlined company operations, enhanced 24/7 customer support, reduced operational costs by **15%**, and improved client satisfaction by **20%**.

Machine Learning Engineer, Maxgen Technologies Pvt. Ltd., India

(10/2019- 04/2022)

Crop Health Monitoring System

- As a key contributor to a large-scale agricultural project, optimized CNN-based models (VGG16, ResNet, and MobileNet) for crop health monitoring, enhancing performance by **15%** and achieving **89%** accuracy while leading data augmentation with fine-tuning sophisticated models.
- Implemented MLflow and an end-to-end **CI/CD pipeline**, resulting in a **25%** increase in crop yield accuracy, a **30%** reduction in crop loss, and a **16%** revenue boost annually.
- Coordinated with cross-functional teams to integrate models into business workflows and utilized big data technologies (Hadoop, Spark) and cloud platform AWS for scalable data handling and deployment.

Freelance ML/Generative AI Engineer

(01/2024–Present)

- **AI Cold Email Generator:** Developed a sophisticated LLM-based generator using the Mistral 7B model, Groqcloud, LangChain, and Streamlit, deployed on Vertex AI.
 - **Optimization:** Boost email generation speed by **40%** and cut HR processing time by **20 hours** weekly.
 - **Data-Driven Personalization:** automated job listing extraction, requirement parsing, and Chromedb for portfolio matching leads to a **30%** increase in response rates and a **25%** rise in project engagement.
 - Applied BLEU and ROUGE scores and conducted **A/B testing** to refine email quality.
-

Key Projects ([GitHub](#))

E-Commerce Product Recommendation System

- **Hybrid Recommender Model:** Created a scalable recommendation system combining rating-based, content-based, and collaborative filtering models. Deployed on GCP using FastAPI and Docker, achieving 88% precision and 85% recall and boosting recommendation accuracy by 20%.
- **Data Preprocessing with NLP:** Applied text preprocessing, regex cleaning, tokenization, lemmatization, and TF-IDF to enhance data quality and boost recommendation performance.

Customer Churn Analysis and Prediction

- Led a team to achieve a **93% F1 score** with **XGBClassifier**, Decision Tree, and ANN, developed a scalable API with Flask and Docker on Heroku, and utilized Python and Apache Spark for data processing, with impactful Tableau visualizations and MLflow for model optimization.

Sentiment Analysis on Amazon Food Reviews

- Implemented RoBERTa and VADER models for precise sentiment analysis of customer feedback.
- Conducted robust text preprocessing using NLTK for tokenization and named entity recognition.

Education

Post Graduate Certificate in Artificial Intelligence and Machine Learning (05/2022–12/2023)
Lambton College, Toronto. (GPA: 3.6/4)

Bachelor of Engineering in Computer Science (09/2015–08/2019)
Gujarat Technological University, Gujarat, India (GPA: 3.8/4)

Certifications

Machine Learning Specialization by Stanford University
Natural Language Processing by Andrew Ng, DeepLearning.AI
Generative AI: Prompt Engineering by IBM
Generative AI Proficiency in LLMs by iNeuronAI
Microsoft PowerBI by Simplilearn
Python for Data Science at IBM.
Google Data Analytics.
