Rohit Bohra

Machine Learning Engineer

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Professional Summary

Accomplished Machine Learning Engineer and Data Scientist with over 5 years of experience in developing predictive models, analyzing user behavior, and deploying AI-driven solutions. Proficient in machine learning, deep learning, NLP, and cloud computing, with a proven track record in healthcare, education, Finance domains. Adept at leveraging Python, AWS, LangChain, and LangGraph to deliver innovative solutions. Published researcher with expertise in feature engineering and model optimization.

Professional Experience

1) **Senior Machine Learning Engineer**
   Tipstat - Bengaluru (July 2024 - Present)

   - Built an Agentic AI application that would act as a research assistant for Scientists who convert Waste-to-fuel. (Agentic AI application)
   - Built a Sales Representative assistant that would guide the Sales Rep. by providing answers to questions asked by the client by referring to the document submitted by the sales rep. During the start of the meeting. We have used the RAG approach to find relevant answers to the questions asked.
   - Built an AI counselor for career guidance based on the user interest, utilizing LangChain and LangGraph to provide context-aware, conversational support for users.
   - Developed an automated workflow for an education loan provider, enabling seamless extraction and auto-population of user information from documents, coupled with data-driven loan approval decisions based on factors such as course selection, academic performance, and other relevant criteria. We also finetuned a Language model that would extract the correct information about the student from pool of text. (Unsloth framework for fine tuning model)

   Technologies used: Python, AWS, LangChain, LangGraph, OpenAI, Open Source LLMs, N8N, Pandas, Scikit-learn, RAG.

2) **Machine Learning Engineer**
   Listen2.it - Bengaluru (May 2023 - June 2024)
   - AI-Driven Sales Training Tool Development: Led the design and implementation of an AI-based training platform using GPT-3.5, programming interactive simulations where sales reps engage with AI as potential customers, receiving real-time feedback and performance scoring to improve sales techniques. We would use the RAG approach to validate answers given by the sales representatives.
   - Text to Speech (TTS) Tool Innovation: Pioneered the development of a multilingual TTS tool optimized for cost and performance, achieving a fourfold cost reduction while maintaining quality. Successfully integrated the tool across diverse languages including Hindi, Indian English, Tamil, Kannada, Telugu, and Malayalam.

Technologies Used: Python, Langchain, GPT-3.5, GPT-4, Pinecone, Pytorch, AWS, RAG, .

3) **Machine Learning Engineer**
Instoried Research PVT. LTD. - Bengaluru (September 2020 - March 2023)
- Emotion and Tone Analysis Tools: Developed tools for analyzing and optimizing the emotional content of text in real-time, increasing user engagement and satisfaction. Utilized NLP techniques and ML models to provide actionable insights and recommendations to content creators.
- Content Optimization AI: Crafted AI-driven features such as plagiarism detection, sentiment analysis, and automatic paraphrasing, significantly enhancing content quality and creativity for digital marketing platforms.

Technologies Used: Python, BERT, GPT-2, GPT-3 other open-source models.

4) **Data Scientist and Behavior Analyst**
PlayShifu - Bengaluru (August 2019 - August 2020)
- Implemented advanced analytics for user interactions in AR educational games, driving data-informed game design decisions.
- Built machine learning models to predict user game preferences and completion times, enhancing user satisfaction and retention.

Technologies Used: Tableau, Google Cloud Platform, Python, Scikit-learn library.

Education

- **Master of Computer Applications**

Dayananda Sagar College - Bengaluru **(***June 2016 – May 2018)*

- **Bachelor of Computer Applications**

Garden City College - Bengaluru (*June 2013 – May 2016)*

Technical Skills

- **Machine Learning:** Model development, feature engineering, evaluation (Scikit-learn, Pandas, NumPy)
- **Deep Learning:** Neural networks, optimization, Transformers (BERT)
- **Natural Language Processing:** Text analysis, sentiment analysis, language models
- **Audio Model Training:** Text-to-Speech (TTS), multilingual support
- **Prompt Engineering:** Optimizing prompts for large language models
- **Data Analysis:** Statistical analysis, predictive modeling
- **Cloud Computing:** AWS (model deployment, cloud services)
- **Frameworks:** LangChain, LangGraph
- **Programming:** Python (Pandas, NumPy, Scikit-learn)

Publications

- **"A Comparative Model of Feature Engineering with and without Domain Knowledge"**
  Published a study demonstrating effective feature engineering using machine learning and deep learning techniques without requiring extensive doma.4in expertise.