VIGNESH B

Email: vigneshmath3461@gmail.com | **Mobile:** 9790982175 **| Location:** Chennai

GEN AI DEVELOPER / DATA SCIENTIST

Enthusiastic Data Scientist with **2.9 years of experience,** specializing in Generative AI and a strong foundation in machine learning, deep learning, and NLP. Developed and deployed multiple GenAI applications, including chatbots, recommendation system, framework to detect malpractice/suspicious activity in the Interview Bot (R&D work) and few other POC's leveraging LLMs, vector databases, and RAG techniques.

Proven ability to deliver end-to-end AI solutions, from data preprocessing and feature engineering to model training, evaluation, and deployment across cloud platforms (GCP and AWS). Proficient in developing data augmentation techniques and enhancing model performance.

TECHNICAL SKILLS

Programming Language	Python	**Databases**	MySQL, Neo4j (Knowledge Graph)
Libraries and Frameworks	Numpy, Pandas, Matplotlib, LangChain, HuggingFace, Ollama, Gradio, FlaskAPI	**Technologies and Concepts**	Machine Learning, Deep Learning, NLP, Generative AI (GenAI), Large Language Models (LLMs), Vector Databases, Retrieval Augmented Generation (RAG), Prompt Engineering, API Development, LLMOps
Cloud Platforms	Google Cloud Platform (GCP), Amazon Web Services(AWS)	**LLMs**	Gemini-1.5-flash, Gemini-1.5-pro, GPT-4, Anthropic Claude, Llama 3, text-embedding-ada-002, textembedding-gecko, Imagen

EXPERIENCE

Programmer Analyst – AIA - AIML July 2022 – Present
Cognizant Technology Solution Pvt.Ltd *Chennai, India*

Started with 5 months of intensive in-house training program, developing a robust skillset in both classical and advanced machine learning techniques. This intensive experience encompassed hands-on application of supervised (regression, classification) and unsupervised (clustering) algorithms, model evaluation, and deployment strategies. Furthermore, I gained practical expertise in Deep Learning (ANN, CNN), data preprocessing (cleaning, transformation), feature engineering, exploratory data analysis, and data visualization. My training also included advanced NLP concepts such as RNNs, text analysis, and sentiment analysis.

PROJECTS

1. **GenAI-Powered Chatbots for Temenos**
   Python, Flask API, LLM's (GPT4, Gemini 1.5 pro), LangChain, RAG, Vector Databases, Google Cloud Services.

   Developed two GenAI-powered chatbots for Temenos to automate the explanation of jBC code and provide Q&A capabilities on Temenos release documents. Key contributions include:
   Use Case 1: Explanation of jBC Code for BA/PM (Interactive Fine-Tuning Bot):
   - Built a bot to assist Business Analysts and Project Managers in understanding jBC code with the ability to fine-tune responses interactively.
   - Integrated real-time learning from user inputs to improve accuracy.

   Use Case 2: QnA Bot for Temenos Release Documents:
   - Developed an interactive QnA bot that can intelligently respond to queries regarding Temenos' release documents.
   - Incorporated document parsing to extract relevant data for accurate answers.

   Successfully deployed these models as APIs to be integrated with the business systems

2. **Retirement Payroll Solution for Voya:**
   Python, Mongo DB, LLM's (GPT4, Claude Sonnet 3.7, Gemini 1.5 pro), Neo 4j Knowledge graph, Rudik, Google Cloud Services.

   Developed a recommendation system initially which will detect missing values and anomalies in the retirement payroll data and then provide recommendations to those anomalies. Key contributions include

- Created whole development environment in GCP using services like VM instances, services accounts, IAM, Vertex AI, etc.,
- Built the Data Scan Tool which will do the initial data quality for the data.
- Created Knowledge graph in Neo4j and used that KG in RuDik (Rule mining Engine) to generate the Multivariate functional relationship rules.
- Built a recommendation system which will recommend values to the detected missing values and anomalies in the data.

3. **CMT Project: Predicting Service Order Fulfillment Time – Internal:**

Python, Matplotlib, Seaborn, NumPy, Pandas, Scikit-learn, Machine Learning Algorithms

Built machine learning models to predict the number of weeks needed to fulfill a Service Order (SO). Key contributions include:

- Conducted thorough EDA to understand data patterns and relationships between various SO attributes.
- Cleaned the data and demonstrated my feature engineering skills
- Trained and tested several classification models, including Balanced Random Forest, XGBoost, Random Forest etc., Also performed hyperparameter tuning and model retraining to optimize results.

POC's and R&D's from BU

1. **American Express Bank POC: Converting Figma Designs to React:**

Worked on a Proof of Concept (POC) for American Express, focusing on converting Figma designs to React JS code using Gemini 1.5 Pro Vision model. Key contributions include

- Built various methods to convert Figma designs into React JS components automatically using Gen AI leveraging Prompt Engineering.
- Leveraged the Gemini 1.5 Pro Vision model to interpret and convert design elements into code.

2. **Resume Analyzer:**

Developed a cutting-edge resume analysis tool to streamline the Project recruitment process. The tool leverages the power of AI to efficiently assess resumes against job descriptions, saving time and improving candidate selection accuracy.

- Implemented a batch processing system to analyze multiple resumes simultaneously, significantly improving efficiency.
- Utilized the Gemini-1.5-flash model to accurately compare resumes against job descriptions, generating matching scores with detailed justifications.
- Developed a user-friendly Gradio UI to facilitate easy interaction with the tool.

3. **Malpractice Detection Framework for Interview Bot:**

Developed a comprehensive malpractice detection framework for the Cognizant Role Accreditation Bot. The framework uses cutting-edge AI models to ensure the integrity of the virtual interview process. Key contributions include:

- Integrated Gemini 1.5 Pro Vision model to detect irregularities and suspicious activities during virtual interviews.
- Leveraging prompt engineering implemented video analysis to track unusual movements or activities, audio pattern recognition for anomalies, and text analysis for potential plagiarism.

EDUCATION

University of Madras — Chennai, India
Masters in Statistics | Grade: 7.8 — *Nov 2020 – Jun 2022*

Guru Nanak College — Chennai, India
Bachelor of Science in Mathematics | Grade: 9.2 ***(Gold Medalist)*** — *Jun 2017 – Apr 2020*

ACHIEVEMENTS

- Awarded gold medals by Higher Education Minister Ponmudi for securing 1st rank in Bachelor of Science in Mathematics at the university level.
- Received multiple Cheers Awards for data science and Gen AI projects at CTS.
- Received Associate Data Scientist Badge from CTS by clearing the assessments and bot interview.