Vignesh B

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PROFESSIONAL SUMMARY

Results-driven Data Scientist with nearly 3 years of experience specializing in Generative AI, machine learning, deep learning and natural language processing. Skilled in Python, SQL, and cloud technologies (GCP, AWS), with a strong command of LLMs, vector databases, and retrieval-augmented generation (RAG) frameworks. Proven ability to develop and deploy scalable AI solutions, transform complex data into strategic insights, and drive automation through rigorous data preprocessing, feature engineering, and model evaluation. Committed to continuous innovation and delivering business impact through intelligent systems.

TECHNICAL SKILLS

Programming Languages: Python, SQL, HTML, CSS

Technologies and Concepts: Generative AI (Gen AI), Machine Learning, Deep Learning, Natural Language Processing (NLP), Data Visualization, Data Analysis, Predictive Modeling, Model Evaluation, Prompt Engineering, Retrieval Augmented Generation (RAG), Fine Tuning, Large Language Models, Vector Databases and Graph Databases (Neo4j).

Libraries and Frameworks: Pandas, NumPy, Scikit-Learn, Seaborn, Matplotlib, NLTK, spaCy, TensorFlow, PyTorch, LangChain, LangSmith, Hugging Face, Pymongo.

Cloud Platforms: Google Cloud Services (GCP), Amazon Web Services (AWS)

Database Management System: Microsoft SQL Server, PostgreSQL, Neo4j (Graph Database), MongoDB

PROFESSIONAL EXPERIENCE

Cognizant Technology Solutions Pvt.Ltd | Data Scientist

July 2022 – Present

GenAI-Powered Two Chatbots | GenAI Developer

Chennai, India

- Designed and developed two professional GenAI-powered chatbots for Temenos, one bot is to assist Business Analysts and Project Managers in understanding jBC code with the ability to fine-tune responses interactively. Another one is an interactive QnA bot that can intelligently respond to queries regarding Temenos' release documents.
- Implemented cutting-edge Retrieval Augmented Generation (RAG) techniques with GPT-4, Gemini 1.5 pro, used vector databases, did prompt engineering to tailor responses and ensured seamless functionality through a robust end-to-end solution.
- **Tech Stack:** Python, Google Vertex AI, Azure OpenAI Embeddings, vector databases, LangChain, LangSmith, Python Flask and Postman.

Retirement Payroll Solution | GenAI Developer

- Designed and implemented a robust recommendation system to detect anomalies and missing values in retirement payroll data and generate intelligent value suggestions. Leveraged advanced techniques including multivariate rule mining, anomaly detection, and intelligent imputation to enhance data reliability.
- Architected an end-to-end solution featuring a custom Data Scan Tool for initial quality assessment, implemented Knowledge Graph modeling in Neo4j integrated with RuDik rule mining engine to generate multivariate functional relationship rules, enhancing accuracy and completeness of anomaly detection and value recommendations.
- **Tech Stack:** Python, MongoDB, Google Vertex AI, Document AI, Google Storage, Graph databases, RuDik, Gemini 1.5 pro, Claude Sonnet 3.7.

CMT - Predict Service Order Fulfillment Time | Data Scientist

- Developed and evaluated predictive machine learning models to estimate Service Order fulfillment time, enabling better resource planning and operational efficiency.
- Performed in-depth data exploration, preprocessing, and feature engineering, with a strong focus on data quality, consistency, and relevance to service order characteristics.
- Implemented and fine-tuned multiple machine learning models, including Random Forest, Balanced Random Forest, XGBoost, and SVM, optimizing performance through Grid Search Cross-Validation and metric-based evaluation.
- **Tech Stack:** Python, Pandas, NumPy, Matplotlib, Seaborn, Scikit-Learn, Grid Search CV.

Selected GenAI-Focused Proof of Concepts (POCs) | Gen AI Developer

- **Figma-to-React Code Generation – American Express Bank:** Leveraged the Gemini 1.5 Pro Vision model and prompt engineering techniques to automate the conversion of Figma designs into React JS components, accelerating front-end development workflows.
- **AI-Powered Resume Analyzer:** Built a resume screening tool using the Gemini 1.5 Flash model to match resumes against job descriptions, with batch processing and a Gradio-based UI for efficient recruitment support and candidate evaluation.
- **Malpractice Detection Framework – Interview Bot:** Designed a multi-modal AI framework using Gemini 1.5 Pro Vision to identify suspicious behavior in virtual interviews via video analysis, audio pattern recognition, and text similarity checks.
- **Tech Stack:** Python, Gradio, Google Vertex AI, Document AI, Google Storage, AWS Bedrock, S3, Gemini models, Claude sonnet 3.7, Prompt Engineering Techniques.

EDUCATION

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

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

ACHIEVEMENTS

- Awarded gold medals by Higher Education Minister Ponmudi for securing 1st rank in Bachelor of Science in Mathematics at the university level (2023).
- Received multiple Cheers Awards for data science and Gen AI projects (2024).
- Received Associate Data Scientist Badge from CTS by clearing the learning path and assessments.

CERTIFICATIONS

- Azure AI-900 Certification from Microsoft Azure
- Google Cloud Generative AI Badge
- The Complete SQL Bootcamp 2022 | UDEMY
- 100 Days of Python Pro Bootcamp | UDEMY
- Python For Data Science and Machine Learning Bootcamp | UDEMY
- Deep Learning A-Z | UDEMY
- NLP - Natural Language Processing | UDEMY
- Langchain | UDEMY