

V Balakarthick

📍 Chennai, India ✉ vbalakarthick.be@gmail.com ☎ 8839391963 🔗 <https://www.linkedin.com/in/balakarthick-v-b391581ba/>

PROFESSIONAL SUMMARY

Innovative Data Scientist with over 3 years of expertise in Generative AI (GenAI), Machine Learning, and AI-driven SaaS solutions. Proficient in developing and deploying LLMs, multimodal models, and scalable AI pipelines across Azure Marketplace, AWS, and Snowflake. Experienced in integrating LangChain, GraphRAG, Neo4j, FAISS, and LangGraph to enhance AI inference and autonomous agent systems. Successfully optimized data workflows, reducing annual costs by \$250K through an open-source team routing solution. Recognized as a winner in multiple AI hackathons and an expert in AI automation, NLP, Terraform, and Insurance AI solutions. Passionate about building real-world agentic AI systems using open-source frameworks.

DATA SCIENCE EXPERIENCE

Data Scientist | Hexaware Technologies | Chennai | February 2022 - Present

- Led multiple GenAI and ML POCs, leveraging cutting-edge AI techniques to solve complex business challenges across industries, driving innovation and adoption.
- Developed agentic workflows using LangChain and LangGraph for multi-step decision making, task orchestration, and long-term memory management via FAISS.
- Prototyped CrewAI and Auto-GPT-based agents for recursive task planning and autonomous multi-agent orchestration across workflow pipelines.
- Led the development of Digital Copilot for Insurance Brokers, a Snowflake Native AI solution integrating Azure OpenAI to automate insurance document processing.
- Engineered GenAI-powered AI Assistant using RAG and LangChain, enabling brokers to extract key policy details, coverage limits, and premium calculations from insurance documents.
- Implemented data consistency checks to identify discrepancies in applications, binders, and policy documents, improving underwriting accuracy and compliance.
- Designed and implemented a document digitization pipeline using AWS services and multimodal models, achieving a 40% increase in operational efficiency and processing over 12 million records monthly.
- Deployed large language models (LLMs) and multimodal models in SageMaker for scalable, asynchronous inference, reducing processing times and enabling cost-effective operations.
- Replaced AWS Comprehend with a secure open-source team routing solution powered by BM25, saving \$250K annually and enhancing system reliability.
- Spearheaded the integration of GraphRAG, Neo4j, and FAISS for enhanced data retrieval and processing in large-scale applications.
- Contributed to the BondReco project, earning recognition as a Top 5 Winning Solution at the Microsoft AI Foundry event.
- Built and optimized scalable AI pipelines using tools like LangChain, LangGraph, and LangSmith, streamlining workflows and improving deployment efficiency.
- Built microservices using FastAPI for modular deployment of AI capabilities in enterprise environments.

EDUCATION

Bachelor of Engineering | Electrical and Electronics Engineering | KPR Institute of Engineering and Technology | Coimbatore, India | 2022 | 8.49

PROFESSIONAL CERTIFICATIONS

Microsoft Certified: Azure Data Scientist Associate | AI-900: Microsoft Azure AI Fundamentals | AZ-900: Microsoft Azure Fundamentals | Databricks Fundamentals | DataRobot Fundamentals

SKILLS

- **Programming Languages:** Python (Numpy, Pandas), R, SQL, C#, HTML, CSS, JavaScript
- **Machine Learning Algorithms:** Random Forests, Decision Trees, Clustering, SVM, Neural Networks, Deep Learning, Reinforcement Learning, Computer Vision, PyTorch, TensorFlow.
- **Data Science & Analysis:** Predictive Modeling, Statistical Analysis, Data Mining, Text Mining
- **Generative AI & NLP:** Prompt Engineering, Retrieval-Augmented Generation (RAG), LangChain, LangGraph, Agents, Semantic Search, LLM Fine-Tuning
- **Agentic AI Systems:** Goal-oriented agents, multi-agent architecture, recursive reasoning, persistent memory with FAISS, AutoGPT (prototyped), CrewAI (prototyped)
- **Data Science & Analysis:** Predictive Modeling, Statistical Analysis, Data Mining, Text Mining
- **Databases:** Graph Databases (Neo4j), Vector Databases (FAISS), Azure AI Search

- **Cloud Services & DevOps:** AWS (S3, SageMaker, Lambda), Azure (AI, Blob Storage, Machine Learning), Terraform, CI/CD Pipelines, Docker, devops.
- **Microservices & APIs:** FastAPI, Modular microservice deployment, API integration
- **Business Intelligence & Project Management:** Agile, Scrum, Cross-Functional Collaboration
- **Specialized Skills:** Natural Language Processing (NLP), Large Language Models, Analytical Skills

PROJECTS

Document Digitization | Hexaware Technologies | December 2023 - Present

- Developed and implemented a scalable architecture designed to automate the extraction of content from documents for various clients, significantly enhancing operational efficiency using a multimodal model (CLAUDE).
- Engineered a solution that autonomously processes documents, extracts pertinent text, and compiles it into structured JSON files, effectively streamlining data management and accessibility.
- Customized the architecture to automatically categorize and store JSON outputs in client-specific locations, greatly improving data retrieval processes and organizational effectiveness.
- Achieved a significant reduction in operational costs and manual labor by automating the document handling process, previously performed manually, thereby ensuring a more efficient allocation of resources.
- Successfully managed and processed over 12 million records per month, demonstrating exceptional capability in handling large-scale data operations and maintaining high accuracy and consistency across all tasks.

ACHIEVEMENTS

- **Top 5 Winning Solution: BondReco** – Recognized by Microsoft AI Foundry for innovation in SaaS solutions.
- **Noteworthy AI Mention Award:** Instant Loan Audit – Praised for impactful AI-powered auditing.
- **Winning Designathon:** Delivered an AI-powered personalized onboarding assistant with significant user experience enhancements.
- **GenAI Hackathon Winner:** Built scalable solutions demonstrating expertise in Generative AI.
- **ManuCon GenAI Hackathon Winner:** Excelled in leveraging AI for innovative business applications.
- **Cost-Saving Initiative:** Developed an open-source team routing solution replacing AWS Comprehend, saving \$250K annually.