

# Sheharyar Akhtar

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## Skills

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- **Programming Languages:** Python, R, C++, Julia, Stan, SQL, noSQL, Bash
- **Databases:** MySQL, Snowflake, GreenPlum, PostgreSQL, Athena, DynamoDB
- **Data Engineering:** Pandas, Spark, Kafka, Apache Flink, AWS Glue, S3, Lambda, Kinesis
- **Vector Databases:** FAISS, VectorDB, ChromaDB, Azure AI Search, Pinecode
- **Generative AI:** LangChain, LangGraph, CrewAI, Azure OpenAI, Gemini, HuggingFace, RAGs, Multi-Agent Workflows, Chainlit
- **Cloud:** Azure (Machine Learning Studio, AI Studio, Copilot Studio, etc.), AWS (Rekognition, Textract, Lex, Bedrock, etc.)
- **Tools & Frameworks:** RStudio, Jupyter Notebook, Anaconda, Git, Docker, Cron, Azure DevOps, MS Excel, MLFlow, Flask, BeautifulSoup, Selenium, PowerBI, Airflow
- **Soft Skills:** Agile, Scrum, Leadership, Communication, Problem Solving, Strategic Planning

## Experience

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### Systems Limited

Aug '23 – Present

#### Consultant – Data Science

- Created a Retrieval-Augmented Generation (RAG) system using Huggingface embeddings, Gemini, and FAISS vector store, enabling efficient document interaction and assessment by querying an LLM for precise answers, complete with page references
- Engineered a multi-agent workflow for RFP assessment, transforming RAG into a comprehensive tool for evaluating and responding to client RFPs, with specialized agents for requirement gathering, research, use-case development, Azure pipeline design, and report generation.
- Implemented a standardized RFP preliminary analysis across the organization by integrating the multi-agent workflow, significantly enhancing the accuracy and speed of response generation, making it a best practice for initial client engagements.
- Designed an advanced HR chatbot using Amazon Bedrock for generative AI capabilities, integrated with Amazon Kendra for efficient document retrieval, and automated HR inquiries with AWS Lambda and Amazon S3 for serverless and scalable performance.
- Optimized HR processes by automating routine inquiries, significantly improving response accuracy and efficiency through advanced generative AI techniques and scalable cloud infrastructure.
- Developed a search engine workflow that integrates multiple LLMs to generate keywords, search for relevant information online, compile comprehensive answers with links to resources, and validate the accuracy of the results, ensuring reliable and accurate outputs for complex queries.

### Afiniti

April '21 – Aug'23

#### Data Scientist II | Applied AI

- **Trained and led** up to 5 resources across different accounts to define strategic roadmaps and ensure quality deliverables
- Conducted in-depth analyses on clients' environment to understand customer behaviors, to drive business value and modeling strategies
- Transformed raw data feeds into meaningful modeling datasets using stored procedures in **PostgreSQL and MySQL**
- **Engineered customer features** that improved model validations by **over 50%** when included in the modeling process.
- Collaborated with an international team of data resources, developers, client executives and project managers to **launch Afiniti on two new clients** in the Iberia region

## Projects

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#### Sophisticated HR Bot Development

- Developed an HR chatbot using Amazon Bedrock for generative AI and Amazon Kendra for efficient document retrieval, automating routine HR inquiries and tasks.
  - Standardized the bot across HR functions, improving response accuracy and reducing manual workload.
- Technologies:** Amazon Bedrock, Amazon Kendra, AWS Lambda, Amazon S3, Python, Docker, Git

#### LLM Consultant using Multi-Agent Workflow

- Created a RAG architecture using Azure AI Search to index and vectorize documents, text and images for retrieval augmented generation
  - Created a multi-agent workflow for assessing RFP requirements, researching relevant literature online and recommending state-of-the-art solutions that satisfy the clients' needs
- Technologies:** CrewAI, Azure OpenAI, Azure AI Search, Azure Machine Learning, LangChain, Google Serper API, custom tools

## Education

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#### B.S. Mechanical Engineering – GIKI

- **Courses:** Engineering Statistics, Numerical Analysis, Intro to Computing, OOP, Linear Programming, Software Engineering

## Achievements and Awards

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- Published a Peer-reviewed article in the Cureus Journal of Medical Science, contributing to understanding the root cause of hesitation in getting the Covid Vaccine – Cited 32 times
- Authored multiple articles for the online teaching blog "Towards Data Science," sharing insights on Bayesian modeling – Over 10k views