

# Mohammad Hasan

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## Professional Summary

Experienced Data Scientist with expertise in Retrieval-Augmented Generation (RAG) system development and evaluation. Skilled in utilizing tools and technologies such as Azure OpenAI, Promptfoo, Promptflow, and advanced vector storage methods. Proficient in optimizing large language models (LLMs), generating structured outputs, and implementing advanced prompt engineering techniques. Adept at leveraging Python, machine learning frameworks, and embedding techniques to address complex challenges and deliver innovative solutions.

## Skills & Abilities

- **Programming Languages:** Python, C#
- **Machine Learning & AI Tools:** Pandas, Scikit-Learn, Numpy, TensorFlow, Matplotlib, Kedro, Degster
- **LLM and RAG Frameworks:** Azure OpenAI, Function Calling APIs, Structured Outputs, Promptfoo, Promptflow, Promptflow Eval
- **Data Engineering:** Vector storage, Data embedding, Retrieval-Augmented Generation (RAG) Systems
- **Database Management:** Microsoft SQL Server, MySQL

## Professional Experience

### WORKING STUDENT AS RESEARCH DATA SCIENTIST | KPMG GLOBAL SOLUTION GROUP | JANUARY 2024 – PRESENT

- Developed and implemented Retrieval-Augmented Generation (RAG) systems for AI-driven enterprise solutions.
- Utilized Azure OpenAI for large language model integration and employed tools such as Promptfoo for prompt testing and evaluation, and Promptflow for orchestrating LLM applications.
- Applied vector storage and embedding techniques to enhance data retrieval efficiency and contextual response generation.
- Conducted prompt engineering to optimize large language model performance and response accuracy.
- Assessed system workflows and performance using Promptflow's evaluation capabilities, achieving significant improvements in system efficiency.

### RESEARCH ASSISTANT | UNIVERSITY OF POTSDAM | AUGUST 2023 – AUGUST 2024

- Conducted research for the **MEASURING IRREGULAR MIGRATION** project ([irregularmigration.eu](https://irregularmigration.eu)), focusing on healthcare-related data in the UK to uncover patterns in irregular migration.
- Gathered hospital data through advanced web scraping techniques using Python and Selenium.
- Performed extensive data cleaning, integration, and preprocessing to prepare datasets for machine learning applications.
- Developed and implemented machine learning algorithms to identify trends and insights related to irregular migration.

## Education

**MSC IN DATA SCIENCE** | OCT 2021 - PRESENT | **UNIVERSITY OF POTSDAM** | POTSDAM, GERMANY

**BSC IN COMPUTER SCIENCE AND ENGINEERING** | 2016 – 2020 | **AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH** | DHAKA, BANGLADESH

CGPA: 3.92 (German 1.1)

## Certifications

- IBM AI Engineering
- Introduction to Deep Learning & Neural Networks with Keras
- Deep Neural Networks with PyTorch
- Building Deep Learning Models with TensorFlow
- AI Capstone Project with Deep Learning
- Machine Learning with Python

## Achievements

- Winner: Hult Prize @ AIUB 2017-18
- Dean's List Honor for exceptional academic performance

## Languages

- Bengali (Native)
- English: Fluent (IELTS Band 7.5)
- German: Beginner