

2024 AI Challenge – The Musheer App

Your career counsellor robot

Product

Problem

High school graduates and university students in Pakistan face the difficult question of what career path they should choose for applying to college. While the internet has abundant information about the different career prospects and their scope in Pakistan, students need to put in a lot of time and effort to research this information. Furthermore, they require career advice from a source that is quick and easily accessible.

Solution

The Musheer App provides Pakistani students with a one-stop solution to access career guidance and job industry-related information. Its users can give prompts and get contextual information to help them make their career decisions.

Target Audience

Our target audience is mainly students in Pakistan graduating high school and interested in engineering fields, as well as engineering students who need information about the engineering job market in Pakistan. Mid-career professionals looking for a career switch may also use the app.

Engineering

High-Level Design

The Musheer app accepts a prompt from the user, containing details such as the current level of their education or their academic interests and endeavours. Users may request recommendations about what engineering degree they should choose, or ask questions about the job market for their current engineering degree. The app uses generative AI to provide them with a contextual response that captures information of the following types:

- Recommended degrees and career paths
- Details of companies that hire employees in related fields (job requirements, desired skills, income, etc.)

We use a simple Command Line Interface to put more effort into customising our application's responses to best suit Pakistani students. In the future, we do hope to implement an appealing Graphical User Interface.

2024 AI Challenge – Product Report

Role of Generative AI

Our application implements Retrieval Augmented Generation (RAG). We have collected data related to Pakistan's education and job industry from various sources. Our data includes:

- Details of the HEC-approved curriculum for various engineering degrees
- A list of job postings by different companies in Pakistan, collected from job-searching websites.

This data has been fed into OpenAI's already-trained model, Chat GPT 3.5 Turbo. The model combines this data with its own to tailor its responses specifically for Pakistani students. Moreover, since the original data is not updated after September 2021, our latest data adds to the functionality of the chatbot.

Technologies

- FastAPI
- OpenAI API
- Pinecone Vector Database

Results and Analysis

To test the accuracy of our application, we entered a range of prompts that we expect from our target audience. We have analyzed that the application efficiently uses the provided data and the context from user prompts to give up-to-date job information and well-tailored career advice.

****Welcome to the Musheer Chatbot. Your personal career counsellor.****

You: hello

Musheer: Hello! How can I assist you today?

You: I like drawing and solving math problems, which engineering field should i pick as a pakistani student?

Musheer: Based on your interest in drawing and solving math problems, you may enjoy pursuing a career in Electrical Engineering as a Pakistani student. Electrical Engineering involves working with circuits, soldering, and various electrical components, which aligns well with your interests. Additionally, the field requires strong math reasoning skills, making it a suitable choice for someone with your background.

You: which universities in pakistan offer this field?/

Musheer: The universities in Pakistan that offer software engineering degrees are UET Taxila, Quaid-e-Azam University in Islamabad, and Punjab University College of Information Technology (PUCIT).

You: what about the companies that would hire me after i graduate?

Musheer: Based on the context provided, it seems that companies would be interested in hiring you after you graduate because of your innovative, creative, technical, management, and presentation skills developed during your degree program. These skills are highly valued in the job market and would make you a desirable candidate for many companies.

Going Forward

Currently, The Musheer App can only provide career guidance regarding the engineering field. In the future, we hope to expand its knowledge base over as many fields as possible, including science, arts linguistics, etc. We also hope to include a catchy graphical interface.

Citations

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