

# **Symbiosis Institute of Technology**

## **Developing an Effective Question Answering System for Job Descriptions:**

Bridging the Gap Between Job Seekers and Employers

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Natural Language Processing

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## Introduction:

Many websites like Glassdoor, Unstop, Job Search India, and Indeed provide a lot of information about jobs. Sometimes, it can be overwhelming to figure out where to go for job-related info. Imagine if there was just one place where you could find all the job-related info you need. This place would not only help you apply for jobs but also give you details like what skills a company is looking for, how much they pay for a job, and more. That's where this question-answering bot comes in. Instead of searching on Google for job info, you can use this chatbot to quickly find the information you need. It's like a one-stop-shop for job-related info.

## Motivation:

Developing a question-answering system for job descriptions is driven by the need to simplify the overwhelming task of sifting through a vast number of job listings. This system saves time for job seekers by swiftly providing relevant information, improving job-seeker and job-post alignment, enhancing user experience, and ultimately benefiting both candidates and employers.

## Problem Statement:

This problem statement emphasizes the importance of making a system that helps job seekers easily find the right information in job descriptions. This will make applying for jobs easier and help match candidates with the right jobs. The research paper will look at different challenges like understanding natural language, extracting information, and creating a user-friendly system for job seekers and employers.

## Objective:

The objective is to create an efficient and user-friendly question-answering system for job descriptions, streamlining the job search process, improving job matching, and enhancing the overall experience for job seekers and employers.

## Methodology:

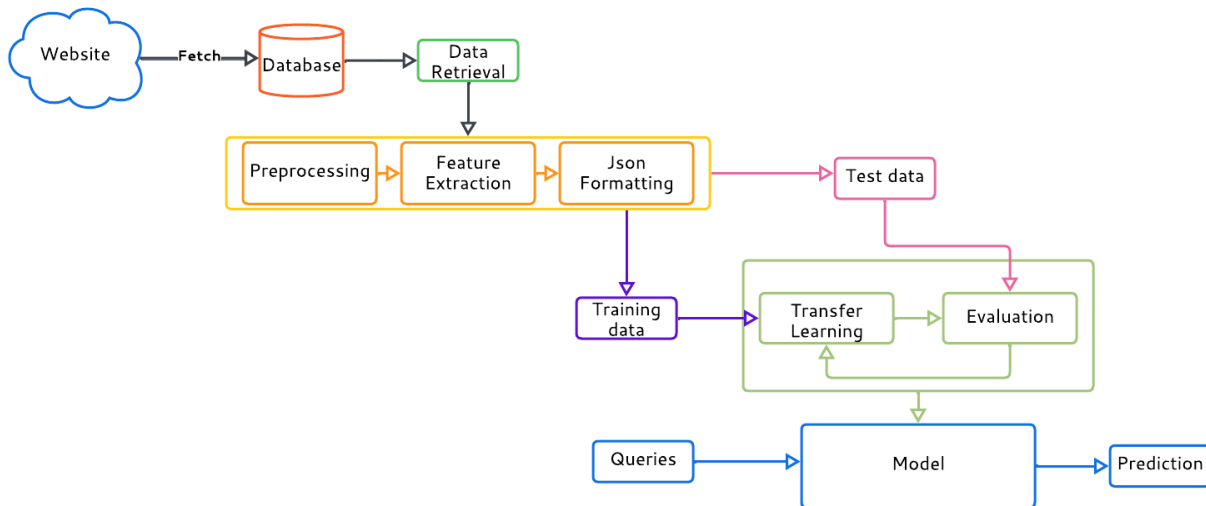


Fig: workflow

## Results and Discussion:

- correct = 9981
- eval\_loss = -6.143429250394011
- incorrect = 1
- similar = 18

This question-answering system is not a generative model; it has been trained on a specific set of data obtained through web scraping, which provides limited information about companies and jobs. Consequently, the model's performance is constrained to the data it was trained on. As a closed domain question-answering system, it exhibits strong performance on both its training and validation datasets. However, its performance may be less reliable when applied to entirely new, unseen data, given its limited exposure to diverse information sources.

Deployment:

## Limitation:

The data is limited to a two-year timeframe, meaning our question-answering bot cannot process job descriptions from before 2021. Currently, we have created a dataset using five sets of questions for each context. However, all the questions within the dataset follow the same pattern, which can lead to overfitting of the model. Creating the dataset is a time-consuming task, so we have implemented a more efficient approach by using similar questions.

## Conclusion:

The development of a question-answering system tailored for job descriptions holds immense promise for the future, offering several compelling advantages. Firstly, in an ever-evolving job market, this system will be invaluable in helping job seekers swiftly identify the most relevant opportunities, thereby reducing job search time and increasing the likelihood of finding the right fit. Additionally, employers stand to benefit by streamlining their recruitment processes, saving time and resources while improving candidate-employer alignment.

## Reference

1. <https://simpletransformers.ai/docs/installation/>
2. Jacob Devlin, Ming-Wei Chang, Kenton Lee, & Kristina Toutanova. (2019). BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding.