***Problem Statement***: AI Recruiter

***General Description***

A simple chatbot or chatbot-like web interface which enables interaction with the Job applicant easier to handle even in off work hours, which is a huge pain point to recruitment teams. We propose a hassle-free chatbot, to tackle this problem with a novel approach, which creates a “***User Social and Work – Profile Analysis report***” which would be an integration and result of various parameters like ‘Social and Work Digital Profile Analysis’ and ‘Resume check’. These will be further described the sections to come.

***Novelty***

There are multiple chatbots already in the ecosystem of recruitment, which deal with handling the queries and shortlisting of candidates for interviews. We propose a chatbot with *unique and novel approach* of shortlisting the candidates.

We propose a way to analyse the candidate NOT just from the Resume, but build an overall ***digital profile with respect to Work and Social*** *lives*. We plan to include various parameters like Genuineness, Confidence, Fluency, *Validating user claims on Resume*, Knowledge compared to peers, personality type, Active social trigger points, and many more.

We also score the user based on the conversation with chatbot which analysis whether the person fits for the given role.

So, there are two modules in our project.

* Resume based scoring
* Work-life and Social-life Digital Profile Report scoring
* Chatbot Conversation scoring

The shortlisting is done on the overall/aggregate score of all the parameters, where the admin or Employer has the feature of configuring the importance given to each parameter and setting a threshold to shortlist candidates. Nonetheless, there are default parameters set to help them understand the context of scores awarded.

***Business Impact***

* To determine the business impact, let’s look at it features
  + Tackles user questions (off work hours)
  + Validates claims made by user (in terms of achievements and projects) and generates a work-life report with various visualizations of parameters stated above.
  + Evaluates the digital profile of a candidate, generates a report on his personality with various parameters taken into consideration
  + Filters and matches the job criteria in a Resume.
  + Chatbot conversation analysis allows to score the user based on few more parameters.
  + Uses, the above features, to score the candidate and shortlist besides generating a visual report.
* A hassle-free installation process for the Employers, who could use the tool and setup the environment with just a couple of commands. Also, user-friendly for candidates, who could just upload the resume to apply for a job role.
* Employer has the feature of configuring the shortlisting criteria, for various job roles
* A typical recruitment team would spend weeks together to do the same things. (Although most teams don’t do a digital profile evaluation). All of this can be done in matter of minutes/seconds saving huge amounts of time and mundane work at hand.
* If a candidate is not shortlisted, a suitable role can be suggested to the candidate based on his profile.

***Technology Stack***

* User Interface
  + React
  + Ionic
  + AJAX & Data Connectors
  + IBM Mobile Foundation
* Backend
  + Python
  + Natural Language Processing
  + Machine Learning
  + Web Scraping
  + Data Connectors
  + Data Visualizations
  + IBM Personality Insights
* Frameworks
  + Tensorflow
  + NLTK
  + SpaCy
  + Matplotlib
  + Seaborn
  + Scikit-learn
  + Flask
* Deployments & Database
  + IBM Cloud Object Storage
  + IBM Cloudant
  + IBM Maximo Asset Manager
  + IBM IoT Platform
  + IBM Kubernetes

***Scope of Work***

* **User Interface –** Two user interfaces, one for the candidate and one for the Admin, also called the Dashborad. We plan both the interfaces to be developed using React and Ionic.
* **Database -** IBM COS and Cloudant used to store various inputs and parameters generated by the backend python scripts and Web interface. Acts as data connector between various interfaces and backend.
* **Backend –** Various python scripts and API endpoints used to process the data with frameworks mentioned above to generate visual reports and shortlist candidates.
* **Deployments –** All the code developed will be deployed to IBM services mentioned above

***End-to-Flow***

* User can see various job roles available through his interface. Applies to the role using chatbot, any queries are resolved by posting questions in High-level language.
* Once, the user posts the data and leaves, the data is stored in IBM COS
* The python scripts are invoked, which evaluates and shortlists the candidates by scoring on three parameters
  + Resume based keyword matching and scoring. Matching the requirements of the job role.
  + Build a digital profile, generate a report based on various parameters. Present it to the admin in the dashboard. (Both Work-life and Social-life)
  + Use the conversation with the chatbot to bring in a few more parameters and include it in the report.
* Admin can access the dashboard to verify the shortlisted candidates, get personality insights like genuineness, confidence, etc and details to contact them.
* The developed code is containerized and deployed in Kubernetes, for remote access.
* We plan to make it open-source on GitHub, where employers can use it to install setup with just a few commands.

***Details:***

***Team Name:*** Seizure

***Members:***

1. Nikhil JSK
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