





AtmaNirbhar: Job Prediction Portal for Disabled People

Theme: Social Good







Team Name: Rehabilitors

Team Members

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Project Link: https://github.com/ShubhamGarg9060/job_prediction
Project Video Link: https://www.youtube.com/watch?v=1vv7E05mSmM

Introduction

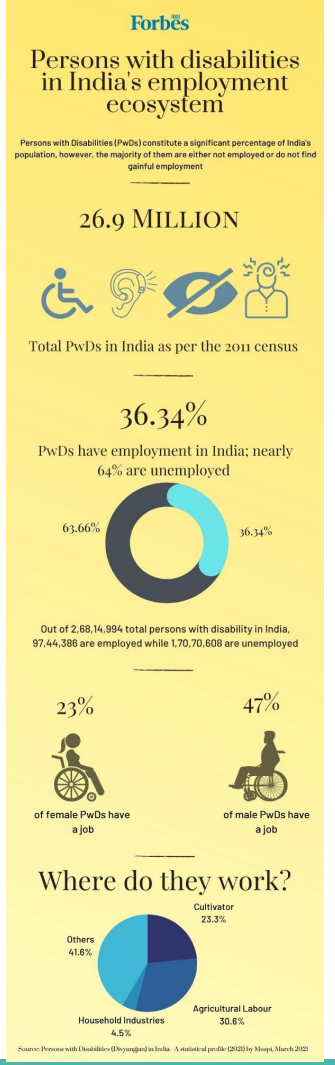
According to a Ministry of Statistics report on persons with disabilities, nearly 64 percent of persons with disabilities in India don't have jobs,We believe that everyone, regardless of their abilities, deserves access to meaningful career opportunities.

Our project aims to break barriers and foster inclusivity by leveraging cutting-edge technologies, including AI, to predict personalized job titles based on disabilities and qualifications. In today's fast-paced and competitive job market, we recognize the challenges faced by disabled individuals in securing suitable opportunities.

At its core, our project utilizes cutting-edge Artificial Intelligence (AI) algorithms, offering personalized job predictions based on disabilities and qualifications. We are committed to empowering disabled job seekers by helping them discover career paths aligned with their unique strengths and talents.

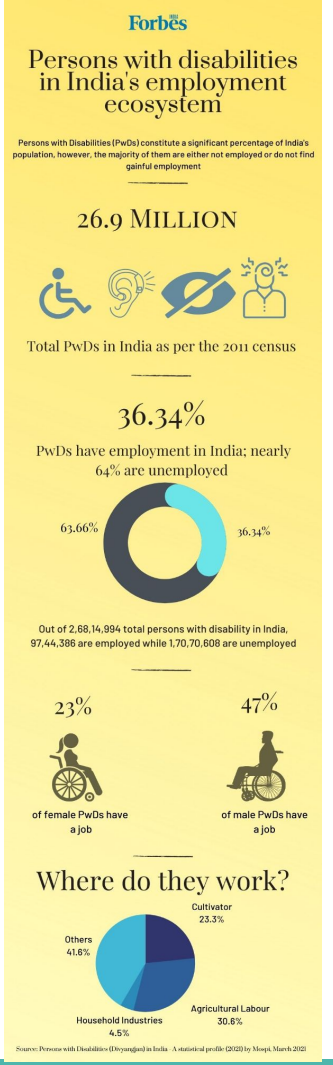
Our Vision:

To foster a society where disabilities do not limit one's career aspirations, but instead, become stepping stones towards success. We envision a future where every individual can pursue fulfilling careers, contributing their skills and talents to diverse industries.



DESCRIPTION

1. The **"Atmanirbhar"** project is a transformative initiative aimed at addressing the challenges faced by disabled individuals in accessing suitable job opportunities. The project revolves around the development of a user-centric web application that utilizes advanced Machine Learning algorithms to predict job titles aligned with the unique abilities and qualifications of disabled users.
2. The web app takes user-provided information on disabilities and qualifications as input and utilizes **KMeans** and **RandomForest** algorithms to analyze and process the data. KMeans clustering is employed to predict job titles that suit the user's profile, considering their disabilities and qualifications. The RandomForest algorithm further enhances the system by recommending similar job titles, providing a broader range of potential career options for users.
3. The project's technology stack includes the Flask web framework for building a user-friendly interface and **Firebase** (Pyrebase) for ensuring secure authentication and real-time database management. Additionally, a Chatbot integrated with **Dialogflow** provides 24/7 support, resolving user queries and enhancing the user experience.



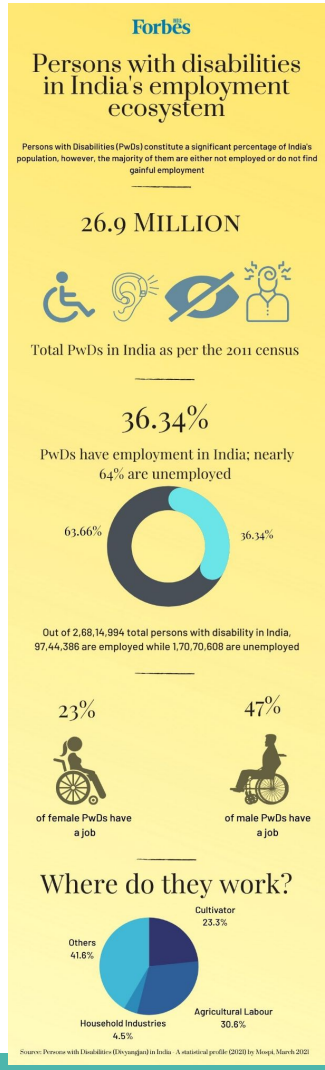
PROBLEM STATEMENT

Disabled individuals often face immense challenges in securing suitable job opportunities. Prejudices and lack of access hinder their professional growth, perpetuating inequality in the job market. We recognized this gap and embarked on a mission to address it through our revolutionary project.

We address the pressing challenge faced by disabled individuals in securing suitable employment opportunities. By providing personalized job recommendations, we aim to empower disabled individuals with increased access to inclusive job opportunities.

The current system doesn't focus on providing jobs for differently abled people. The current system provides job for normal people and so many disabled people are jobless. The proposed system would predict as well as recommend the suitable jobs for differently abled people so that they would get their desired jobs easily and efficiently.

Join us as we pave the way for a more inclusive job market and make a positive impact on the lives of disabled individuals!



Concept and Theory Used

The project relies on a combination of cutting-edge concepts and theories to achieve its goal of empowering disabled individuals with suitable job opportunities. Let's explore the key concepts utilized in the project:

1. Machine Learning (ML):

- ML algorithms, specifically KMeans and RandomForest, play a pivotal role in predicting suitable job titles for disabled individuals.
- KMeans algorithm is used to cluster similar profiles of disabilities and qualifications, enabling personalized job predictions.
- RandomForest algorithm is employed for accurate and reliable job predictions, considering various factors and features.

2. Data Clustering:

- Data clustering is the process of grouping similar data points together based on their characteristics.
- In this project, disabilities and qualifications are clustered using KMeans, allowing the app to understand the distinct profiles of users and make appropriate job predictions.

3. Recommender Systems:

- Recommender systems utilize machine learning techniques to recommend items or options based on user preferences.
- In this project, similar job titles are recommended to users through clustering techniques, providing a broader range of potential career choices.

4. User Profiling:

- User profiling involves analyzing user data to create personalized profiles, understanding their preferences, and tailoring services accordingly.
- In this project, disabled individuals' disabilities and qualifications are used to create unique profiles, enabling the app to suggest job titles aligned with their strengths.

5. Dialogflow for Chatbot:

- Dialogflow, a natural language processing (NLP) platform, powers the integrated Chatbot for real-time user support.
- The Chatbot addresses user queries, providing a seamless and interactive experience 24/7.

6. Firebase for Authentication and Real-Time Database:

- Firebase is employed for secure user authentication, ensuring data privacy and access control.
- Additionally, Firebase's real-time database facilitates efficient storage and retrieval of user information, enhancing app performance.

Impact of Idea

1. **Increased Accessibility to Job Opportunities:** By employing Machine Learning algorithms, the web app can predict suitable job titles for disabled individuals based on their unique abilities and qualifications. This personalized approach enhances the accessibility of job opportunities for disabled individuals, reducing the barriers they face in the traditional job market.

2. **Empowerment and Self-Confidence:** This newfound self-awareness fosters a sense of confidence and self-belief, encouraging them to pursue diverse career paths they might not have considered otherwise.

3**. Promoting Inclusivity and Diversity:** The app's focus on inclusivity promotes diversity in the workforce by facilitating a more equitable representation of disabled individuals in various industries.

4. **Breaking Stereotypes and Bias:** Users are presented with job recommendations based on their qualifications and abilities, reducing bias and preconceived notions that often limit job opportunities for disabled individuals.

5. **Data-Driven Insights for Employers:** The app's data-driven approach generates insights for employers, highlighting the diverse skills and qualifications of disabled individuals. Employers can leverage this data to create more inclusive hiring policies, leading to a workforce that reflects the richness of human diversity.

6. **Social Good and Sustainable Impact:** By democratizing the job search process for disabled individuals, our project contributes to social good and sustainable impact. We envision a future where more disabled individuals secure meaningful employment, leading to improved economic independence and societal integration.

Project Timeline

1

WEEK 1

- Define project scope, objectives, and requirements.
- Conduct research on the challenges faced by disabled individuals in the job market.
- Familiarize the team with the technologies to be used: Machine Learning, Flask, Firebase, Dialogflow.

2

WEEK 2

- Gather datasets containing job data, disabilities, and qualifications.
- Preprocess the data, handling missing values,
- Implement KMeans and RandomForest algorithms for job prediction and recommendation and then train the models .

3

WEEK 3

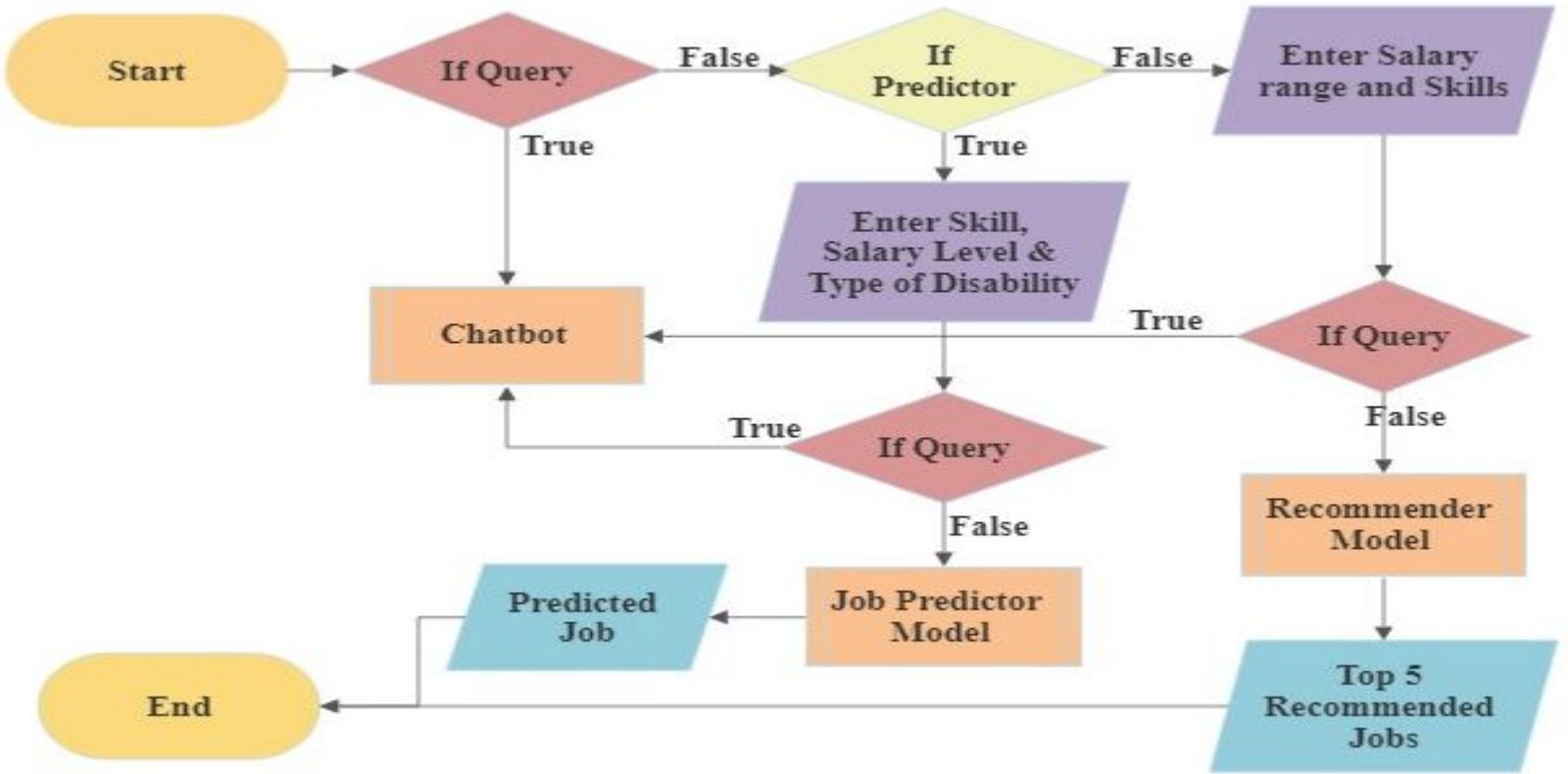
- Set up Flask web framework for building the user interface.
- Create user authentication and integrate Firebase for real-time database management.
- Integrate Dialogflow Chatbot for 24/7 query resolution.

4

WEEK 4

- Conduct comprehensive testing to identify and resolve any remaining bugs or issues.
- Prepare detailed documentation on the app's functionalities, algorithms used, and deployment instructions.

Flowchart


Start
If Query
False
If Predictor
False
Enter Salary range and Skills
True
True
Enter Skill, Salary Level & Type of Disability
Chatbot
True
If Query
True
If Query
False
False
Recommender Model
Predicted Job
Job Predictor Model
End
Top 5 Recommended Jobs

Features

1. **Disability-Driven Job Prediction:** The project's main feature is its ability to predict suitable job titles for disabled individuals based on the disabilities they have and their qualifications. By considering both aspects, the app provides personalized job recommendations tailored to each user's unique profile.
2. **Job Recommendations**: In addition to predicting specific job titles, the project uses KMeans algorithm to recommend other job titles that share similarities with the predicted job. This feature expands the range of job opportunities available to the user, increasing their chances of finding a suitable positions.
3. **Firebase Authentication and Real-Time Database:** The project ensures secure user authentication through Firebase (Pyrebase), protecting user data and privacy. The real-time database feature enables efficient storage and retrieval of user information.
4. **Dialogflow Integrated Chatbot:** To provide round-the-clock support, a Chatbot powered by Dialogflow is integrated into the web app. Users can seek assistance and have their queries resolved at any time, enhancing the overall user experience.
5. **Positive Social Impact:** By assisting disabled individuals in finding suitable jobs, the project fosters a positive social impact. It not only enhances their financial independence but also boosts their self-esteem and integration into society, creating a more inclusive job market.