Personality driven hiring: Advance machine learning model

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Abstract- The Smart Hire Personality Prediction System is a specialized platform designed for Super Admins and Students/Users, aimed at streamlining the recruitment process. Its primary function is to assess the personality traits and skills of users through a specialized Multiple Choice Question (MCQ) examination, which covers five distinct traits. This assessment empowers users to gain valuable insights into their own abilities and aids them in making well-informed career decisions.

The system utilizes the assessment results to generate personalized recommendations, suggesting suitable career paths or skill enhancement opportunities. In addition, it produces detailed reports based on the assessment data, providing users and Super Admins with valuable insights for decision-making.

For Super Admins, the system offers a dashboard for managing user accounts, tracking engagement, and accessing aggregated, anonymized results and reports. This feature assists Super Admins in refining their recruitment strategies.

The overarching goal of the Smart Hire Personality Prediction System is to enhance the efficiency and effectiveness of the recruitment process by aligning individual aspirations with skill evaluations. This approach fosters better career choices and contributes to the overall quality of hiring decisions. However, the system faces challenges in terms of developing accurate assessment methods, ensuring data security, and creating an engaging user experience to ensure its success.

*Key Words***: Hire, MCQ, SVM, Machine Learning.**

INTRODUCTION

In an era of constant technological advancement and evolving workplace dynamics, the Smart Hire Personality Prediction System emerges as a powerful solution to address the complexities and challenges inherent in the recruitment process. This innovative platform is meticulously tailored to cater to the needs of Super Admins and Students/Users, revolutionizing the way organizations discover and engage talent.At its core, the Smart Hire Personality Prediction System is a cutting-edge tool that leverages a specialized Multiple Choice Question (MCQ) examination to evaluate the personality traits and skills of students and users. This assessment goes beyond traditional hiring methods, offering a comprehensive and insightful self-assessment experience that empowers individuals to make informed career decisions. The heart of the system lies in its ability to generate personalized recommendations based on the assessment results. These recommendations guide users towards career paths that align with their strengths or suggest skill enhancement opportunities for personal and professional growth. Moreover, the system provides detailed reports derived from the assessment data, delivering invaluable insights to both users and Super Admins.For Super Admins, the platform offers a powerful dashboard, allowing them to efficiently manage user accounts, monitor user engagement, and access aggregated, anonymized results and reports. This information equips Super Admins with the tools they need to refine their recruitment strategies and make data-driven decisions.The Smart Hire Personality Prediction System represents a visionary step towards a more efficient and effective recruitment landscape. By aligning

individual aspirations with skill evaluations, the system fosters better career choices and enhances the quality of hiring decisions. However, this journey is not without its challenges, including the development of accurate assessment methods, ensuring robust data security, and delivering an engaging user experience. It is through these challenges that the system seeks to prove its worth and ultimately transform the world of talent acquisition.

Project Definition

The Smart Hire Personality Prediction System addresses the challenge of streamlining the recruitment process by introducing a comprehensive platform tailored for Super Admins and Students/Users. The system's primary focus lies in evaluating the personality traits and skills of students and users through a specialized Multiple Choice Question (MCQ) examination encompassing five distinct traits. This process facilitates insightful and accurate self-assessment for users, aiding them in making informed career decisions. The results obtained from the assessment enable the system to generate personalized recommendations, suggesting suitable career paths or skill enhancement opportunities. Furthermore, the system generates detailed reports based on the assessment results, offering both users and Super Admins valuable insights for decision-making. Super Admins are equipped with a dashboard to manage user accounts, track engagement, and access aggregated, anonymized results and reports to refine recruitment strategies. The Smart Hire Personality Prediction System endeavors to create a more efficient and effective recruitment landscape by aligning individual aspirations with skill evaluations, fostering better career choices and enhancing the quality of hiring decisions. However, challenges encompass the development of accurate assessment methods, data security, and creating an engaging user experience to ensure system success.

OBJECTIVES

- Accurate Assessment: Develop a reliable and scientifically validated assessment mechanism using the MCQ exam to accurately gauge five distinct personality traits and skills of users. Ensure that the assessment results provide a meaningful reflection of users' capabilities..

- Personalized Recommendations: Create an algorithm that processes assessment results to generate personalized career recommendations and skill enhancement pathways for each user. Ensure that these recommendations are insightful, actionable, and aligned with users' strengths and aspirations.

- Informed Decision-Making: Empower users to make well-informed career decisions by providing them with detailed insights into their personality traits and skill scores. Help users understand their strengths and areas that may require improvement, fostering their personal and professional growth.
- System Scalability: Build a scalable system architecture that can accommodate a growing number of users while maintaining performance and responsiveness. Ensure that the system can handle increased usage without compromising on user experience.

- Positive Impact: Ultimately, the Smart Hire Personality Prediction System aims to positively impact individuals' career choices, empower them with self-awareness, enhance the quality of hiring decisions for organizations, and contribute to a more efficient and effective job market ecosystem.

- Enhance User Experience: Design an engaging and user-friendly interface for students and users to take the assessment and access their results and recommendations.

- Generate Detailed Reports: Develop comprehensive reports based on assessment results, offering both users and Super Admins valuable insights.

- Improve Recruitment Efficiency and Effectiveness: Align individual aspirations with skill evaluations to improve the quality of hiring decisions.

MOTIVATION

As of the current landscape, traditional recruitment processes often lack a systematic approach to evaluating candidates' personality traits and skills, relying heavily on resume-based assessments and

interviews. These methods can be subjective, time-consuming, and prone to biases. Limited tools exist to provide candidates with comprehensive insights into their personalities and skills, hindering their ability to make informed career decisions. Super Admins typically manage recruitment processes manually, lacking access to aggregated data that could inform more data-driven decision-making. In this context, there is a significant gap in the recruitment market for a holistic solution that combines scientific assessment methods, personalized recommendations, and robust reporting mechanisms. The Smart Hire Personality Prediction System aims to bridge this gap by offering an innovative platform that systematically assesses users' traits, provides personalized guidance, and equips Super Admins with actionable insights for improved recruitment strategies.

To further improve recruitment efficiency and effectiveness, the Smart Hire Personality Prediction System will focus on aligning individual aspirations with skill evaluations in a way that not only benefits job seekers but also employers. By understanding the career aspirations and personality traits of candidates, the system will be able to generate more targeted and relevant recommendations for job openings. This alignment will not only enhance the quality of hiring decisions by ensuring that candidates are a better fit for their chosen career paths but also result in a more satisfied and motivated workforce. Additionally, the system can facilitate ongoing skill development by suggesting training and development opportunities tailored to each individual's career goals, thereby contributing to long-term employee growth and retention.
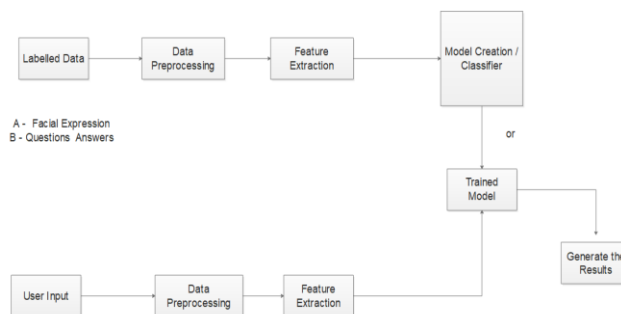
SYSTEM ARCHITECTURE

Fig -1: System Architecture Diagram

ALGORIHTM

● SVM for Personality Traits Assessment

Feature Extraction: Extract relevant features from the MCQ responses that are indicative of different personality traits.

Training: Train separate SVM classifiers for each personality trait using labeled data, where human experts have already assessed individuals', personalities based on their responses to the MCQs.

Predictions: When users take the assessment, the SVM classifiers can predict their personality traits based on their MCQ answers.

Recommendations: These personality trait predictions can then be used to generate personalized career path recommendations. For example, if a user scores high in extraversion, they might be recommended careers in sales or public relations.

● CNN for User Engagement and Feedback:

User Engagement Analysis: Analyze user engagement by processing textual feedback and comments left by users on the platform. CNN can extract sentiment and emotional cues from these texts, helping to understand user satisfaction and engagement with the system.

Feedback Sentiment Analysis: Use CNN to classify feedback as positive, negative, or neutral. This information can be valuable for system improvement and addressing user concerns.

Continuous Improvement: Feedback analysis can be integrated into the system's design, allowing it to adapt and improve its user interface and recommendations based on the sentiments and suggestions of the

users

SYSTEM REQUIREMENTS
  Hardware:
- RAM 3 GB or Above
- Hard Disk 250 GB or Above
- Processor i3 or Above
  Technology:
- SQlite
- Windows Operating System 11
- Python 3.10 or above
  Tools:
- Notepad ++ / VS Code
- Pycharm / Jupyter
- Browser
- Kaggle

CONCLUSION

In conclusion, the Smart Hire Personality Prediction System emerges as a transformative solution that seamlessly marries cutting-edge assessment methodologies, individualized career guidance, and data-driven decision-making. By affording users comprehensive insights into their personality traits and competencies, the system equips them to make informed career choices aligned with their unique strengths. Simultaneously, recruiters and organizations benefit from a refined approach to candidate evaluation, fostering more accurate hiring decisions and strategic talent acquisition.

As a result, the system emerges as a pivotal tool in reshaping both personal career trajectories and the dynamics of the employment landscape, bridging the divide between potential and opportunity in a harmonious synergy of technology and human potential.

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