EDU Tour

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I. ABSTARCT

Selecting a job is one of the most important decisions in a person's life that affects his or her satisfaction levels in work-places and in general. Career counselling using conventional approaches is impersonal, noninteractive to a large extent, hence results in dissatisfaction and mismatch between the individual and career. To the best of our knowledge, no current application offers a straightforward, swiping-initiated interface with a machine learning component for guiding people through their careers. Slicing the preferences of the users, the platform involves an entertaining swipe feature while giving career recommendations by using Random Forest models to consider inputs. It is, therefore, can be saw as balanced solution between engaging gamification of user interaction with the flexible powerful data analysis. This paper discusses the strategy of the platform, its ability to mitigate the problem of career dysjunction, and its significance for the field of career guidance. Also, we speak about the usage of such technologies as machine learning and the application of them to the reformation of the process of choosing the career into the entertaining and effective one. Thus, EDU Tour can be seen as a progression from the existing solutions to the career planning more natural occurrence, fun process, and matched with individual's aim.

II. INTRODUCTION

Career decisions impact an individual's well-being in so many ways including, employment type, income, and happiness. Thus, many people remain in hopelessness and dissatisfaction with their job or career choice because they did not receive proper assistance, or they were not conscious of their opportunities, or the traditional approaches to career counseling are ineffective. Studies show that most people have mismatched careers and therefore will be less satisfied with their job, fewer opportunities for their career advancement, and higher stress levels that affect health.

As the advances in technology, globalisation and changes in the industry requirements are progressively increasing the rate and nature of change in the job market, then the demand for more effective tools for career development continues to grow as well. Print media and standardized forms of career guidance often do not take into consideration the personal proclivities, flexibility of the present day occupation market, and the multilayered nature of today's careers. The result of this is to create a disparity between what exists in the market and the advice that people get, making the career choices less than ideal.

EDU Tour was designed to fill this gap by providing a fun and data-driven way to approach the concept of careers. Taking advantage of the swipe-based model often linked with dating applications, the platform lets its users enhance their hobbies in an engaging way. Combining it with machine learning and focusing on the Random Forest algorithm, EDU Tour analyzes users' preferences and suggests proper careers in return. Of critical importance is the fact that this form of career exploration incorporates both interactivity and strong quantitative data, making the process easy, custom, and efficient.

The value proposition of EDU Tour is in its capacity to respond to the users' need, by using technology-based solutions to the problems posed by traditional models of learning and teaching. With the help of converting career guidance into fun and exciting process, EDU Tour helps people and boost them to make career choice or shift according to the requirements of their destination. Consequently, this paper shall explore the design of the platform, the approach, and the capacity it has to revolutionize career counselling making it a key resource for the student, the working professional and the academician.

III. LITERATURE SURVEY OVERVIEW

A. *Perils of a Wrong Career Choice (Geekium, 2023)*

negative impacts of making wrong career choices, high stress, burnout and no growth. It promotes the reasonable decision-making concerning a career and points out the need for a change for optimal career satisfaction. These results underscore the need for tools such as EDU Tour, which is designed to reduce the level of risk with regard to mismatched career trajectories

B. *Factors Affecting Career Path Choice of Graduates (Al-Abri Kooli, 2018)*

A survey on 70 Omani graduates revealed that personal interest, financial reward influenced career choices. Implications of findings from this study coax the preeminent importance of the introduction of career guidance programs to match the jobs with people. All these results offer a solid evidence for the personalized recommendation system used in EDU Tour.

C. *Career Guidance System Using Machine Learning (Panthee et al., 2023)*

The purpose of this paper is twofold: Exploring the success of applying Random Forest, SVM to the career field prediction task relying on personality traits and learning styles. It further reinforces that, Machine learning is capable of offering relevant career recommendations. The methodology is compatible with the one used in EDU Tour, which applies the same approaches to increase precision.

D. *Efficient Resume-Based Re-Education for Career Recommendation (Ashrafi et al., 2023))*

The Career-gAIde model also presents how AI can help cope with constantly emerging or transformed professions. Their focus on the protection of the user's data, and providing actual implementable strategies match with the kind of approach EDU Tour advocates for when it comes to utilization of the information provided. By identifying the key findings of the study, EDU Tour is enriched by the determination of the actionable insights and dynamic adaptability that can be considered also as valuable lessons for its design.

E. *Understanding Career Identity Development (Garcia et al., 2021)*

The purpose of this research is to establish the effectiveness of the mentoring programs on career readiness for engineering students. They stress the roles of the engagement strategies in case of concerned groups Minority people's ideas are important in practising the Minority engagement strategies in the inclusive EDU Tour. Such information is important in making EDU Tour to appeal to various targeted spectators.

IV. METHODOLOGY

Hence, this paper establishes that EDU Tour course of action entails user-interaction based interface solution with a structuring data analytics approach to career advisement. The platform's design and implementation are structured around four key components: user engagement, data cleaning, data modeling, and feedback loop.

A. *User Interface*

This service uses a swipe gesture to navigate the options, swipe right to like and swipe left options to reject. This makes the design very interactive and users can easily get round the designated site. Although it is a piece of software that is utilized to run other applications, too many visual prompts and elegant animation make the interaction satisfying and simplified.

B. *Data collection and data processing*

Data collection and analysis are done through identification and documenting the user preferences and storing it in the structure dataset. Such datasets are the desired industry, skills, interests mainly the self-interests, and demographics, among others. During data cleaning and data normalization procedures, data is preprocessed so that it can yield reliable result at the end.

C. *Machine Learning Model*

A Random Forest algorithm is used due to its high tolerance to input data and variety of this input. The model processes user preferences and predicts suitable career paths by: More importantly, exploring the history of how careers have evolved over time will also help in data analysis.– Input mapping a user commands to careers. Statically suggesting careers with probability importance based on features. To effectively capture all career profiles, Random Forest model is trained on numerous career profiles, across a wide coverage. Feature importance metrics reduce opaqueness of the model recommendations by acting as guidelines for the prediction.

V. REQUIREMENTS

To develop and implement EDU Tour, the following technologies and tools are utilized:

A. *Front end*

- **HTML:** It is used for elements and sub-elements of the web page and other interface elements.
- **CSS:** To enhance its appearance more suitable for the user interface as well as for the overall user interface design.
- **JavaScript:** In the process of developing high-quality interactions and engaging functions.
- **PHP:** To managing server-side logics and also to improve the front-end- back end interaction

B. *Back-End*

- **SQL Database:**It used to store preferences, careers data and user feedback securely.

C. *Machine Learning*

- **Random Forest Algorithm:** Takes and analyzes user parameters to produce relevant and satisfactory career recommendations. It scales well with quantity and offers clear results via feature important values.

VI. DISCUSSION

Career recommendation systems have become more widespread with years because of the contribution of better technologies. Historically, conventional models employ pre-specified surveys or–typically GPA, skills, or personality traits—fixed career development models. Thus, these systems also have their sets of drawbacks, such as low interactivity, excessive structuralization of recommendations, and a poor level of customization.

In the present generation of systems, designers often use sophisticated learning models such as SVMs and neural networks to improve the general precision of matching the user to prospective occupations. Sites such as Career-gAIde are based on resume recommendation techniques, some may involve learning styles, and some may involve psychometric tests. However, these systems commonly display recommendations in a passive non-interactive form that may disenchant user's and does not capture their dynamism.

EDU Tour distinguishes itself by integrating an engaging user interaction mechanism: swiping. Thus, following the patented concept in other areas, the swiping function of EDU Tour makes choosing a career fun rather than a burden and complicated. They engage by right swiping on careers they like and left swiping on the ones they don't. They interact dynamically to guarantee that users are always interested regardless of the stage they are in, making it unique to the stage, thereby enhancing its user experience.

Moreover, the Random Forest algorithm adopted in EDU Tour allows it to work with numerous sorts of data and guarantee the clarity of the results, thus increasing its reliability. EDU Tour thus takes the next step by providing this solid data processing with an appealing and engaging front-end that is engaged with the user. This approach enhances the accuracy of the career recommendations, in addition to addressing the active user participation requirement, which is an important innovation compared to traditional and existing approaches of EDU Tour.

VII. CONCLUSION

EDU Tour revolutionizes career counseling through combining interactivity with artificial intelligence design. This is still unique because it gets around to the shortcomings of traditional techniques in helping users make good career choices. Thus, EDU Tour can revolutionize the process of career choices and give it a joyful mission by offering individualized practical tips and options. The anticipated improvements are expected to improve scalability, increased to incorporate a larger amount of users and, flexibility to incorporate the dynamics of the market while maintaining its position as one of the primary resources for career counseling.

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