Layoff Guard – Protection and Early Warning Against Layoffs.

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Abstract

As the job market undergoes rapid change due to technology and the economy, the risk of layoff is at an all-time high. People today need to adjust to change. This web application will help users adjust to the dynamic employment market by informing them of the latest skill-based job postings across various websites with extensive information, including analytical tools. Using sophisticated AI algorithms, the application will enable a deep analysis of skill requirements in various job postings so users can follow the emergence of trends and in-demand skills important for future employment. The application will allow the user to perform a risk analysis of the current job to assess the risk of job loss. The application will help people analyze the current job market to determine if a skill and further courses would be advisable for the user based on their career direction. It will include further suggestions and insights based on various freelance and remote work opportunities. For those considering a career change, a skill-based recommendation of transferable skills will also be available with a job compatibility score and overview of suggested roles. The application will utilize smart interview training, in-market salary trends in real-time, and negotiation support to assist users in advocating for their worth.In addition, the application will provide users access to the hidden job market via networking opportunity tools, and job suggestions. As a bonus, an AI-based career roadmap will be part of the application to assist users in using the application to help plan their next career moves and ensure they are working on their career proactively.

Keyword: AI Algorithm, Job Layoff, Freelance, Job market trend, etc.

I. INTRODUCTION

The job market experiences constant transformation due to accelerating technological progress combined with evolving economic factors. Experts within numerous fields encounter growing unpredictability regarding skill demands which frequently threatens their job security through potential displacement. Within this context the necessity to develop adaptive capabilities and learn new skills emerges as a fundamental requirement for maintaining career stability. In response to these challenges we introduce a revolutionary web application that empowers job seekers through insights and analytics about skill-based job postings collected from various online platforms.

This web application utilizes artificial intelligence to execute detailed skill analysis by examining emerging industry requirements across various sectors. The system includes an intricate risk assessment tool that scrutinizes role stability while providing tailored skill development suggestions and course options specific to individual career trajectories. The platform provides an array of specialized tools for individuals aiming to enter gig economy positions or remote work, including job compatibility assessments and potential career path evaluations.

Through advanced interview preparation systems combined with real-time salary trend analysis and negotiation guidance, users gain enhanced capabilities to manage job market complexities. The software platform unlocks hidden employment opportunities while delivering unconventional job recommendations through its distinctive AI-driven career pathway

creator. The combined elements work to expand perceptions of viable career paths while enabling users to safeguard against job displacement and establish durable professional trajectories.

Need for this web application:

1.Job Displacement Anxiety: Professionals undergo intense anxiety concerning job stability with automation and artificial intelligence quickly reshaping conventional jobs. A web application that gives users real-time information on emerging skill requirements can ease these worries by supplying users with the appropriate knowledge to remain competitive in their professions.

2.Skill Gap Identification: Though there are many job search websites available online, a majority of the job seekers fail to identify the precise skills in demand within their desired industries. This web application plugs this gap using AI-based skill analysis, enabling users to gain insights into the skills they should acquire to improve their job prospects.

3.Personalized Career Guidance: Career transition processes can be intimidating. Most do not have access to individualized career counseling and customized resources. By providing customized skill suggestions, job matching scores, and individualized courses specific to one's goals, the app gives individuals a direct plan of action.

4.Access to Concealed Job Markets: A good many of the job vacancies never appear on open advertisement, typically called the "hidden job market." This software enables the users to discover such jobs and widen their scope for searching jobs beyond traditional postings.

5.End-to-End Job Search Tools: Job candidates need a comprehensive strategy to thrive. Intelligent interview preparation tools, current salary trends, and negotiation assistance are integral parts for people to negotiate for their value in a competitive job market.

6.Alternative Work Arrangement Support: As gig and remote work become more prevalent, most professionals seek opportunities beyond the conventional employment setup. The application addresses this demand by providing resources and information tailored for individuals who are interested in freelance jobs and remote work arrangements.

OBJECTIVES OF THE STUDY:

The web app is designed to use AI to detect trending skills from job listings, evaluate job stability, and give users personalized suggestions for skills and courses. It provides job compatibility scores, facilitates career changes, prepares users for interviews, provides real-time salary information, reveals hidden job openings, and creates personalized career maps to help users navigate their careers.

II. METHODOLOGY

This research work uses a mixed-methods design to create a web application that intends to offer job seekers essential information and analysis on emerging skills applicable to new job listings on different online platforms. The methodology has three main phases: data collection, developing the application, and evaluation.

Phase 1: Data Collection

During the first phase, large amounts of data are gathered from various online job sites, such as LinkedIn, Indeed, and Glassdoor. Data scraping methods are used to obtain information regarding job postings, needed skills, and industry trends. The gathered data will be analyzed to determine patterns and emerging skills in various industries. User feedback will also be obtained through surveys and interviews to determine the needs and challenges of job seekers, so the application can solve real-world problems.

Phase 2: Web Application Development

This phase includes web application design and development. The advanced AI algorithms will be used to process the gathered data and offer users personalized feedback.

Key functionalities are:

- Risk Analysis: Assessing the stability of the users' current job positions to identify possible risks of job displacement.
- Personalized Recommendations: Providing users with customized skill and course recommendations based on their profile and career goals.
- Job Compatibility Scoring: Determining a compatibility score for possible job openings compared to the user's skills.
- Interview Preparation Tools: Offering tools and resources for successful interview preparation.
- Real-Time Salary Insights: Presenting real-time salary trends and negotiation strategies.
- Access to the Hidden Job Market: Unveiling job openings that are not advertised.
- An AI-driven career roadmap creator will assist users in navigating their career changes or transitions to freelance and remote work.

Phase 3: Evaluation

During the last phase, the application will be usability-tested with a limited number of job seekers in order to elicit feedback regarding its functionality and performance. Critical performance indicators, such as user interaction, satisfaction rates, and achievement in finding job placements, will be monitored. Qualitative data from users' feedback will also inform iterative development of the application. A/B testing will be applied to further refine features like job compatibility score and personalized suggestions according to user behavior.

III. REVIEW OF LITERATURE

The dynamic transformation of the labor market, underpinned by technological innovation and economic trends, threatens job seekers and employers both. My research is centered on LayoffGuard, a web-based application driven by artificial intelligence intended to help people at risk of job displacement. This work draws on the literature regarding job displacement, skill gaps in the workforce, the implicit job market, and current job search technologies.

- A study by J.A. Smith et al. (2016) puts into perspective how AI and automation affect job replacement, reaffirming the use of tools to mitigate job insecurity. LayoffGuard comes in handy here, providing users with real-time knowledge on skills required, which equips them with the ability to make choices at a time of job insecurities.

- Corroborating this, Gupta et al. (2018) investigate skill deficits compounded by automation, which corroborates the purpose of LayoffGuard in utilizing AI to scrutinize future skill trends and heighten users' sensitivity to important competencies to develop in career growth.

- In addition, the "hidden job market" that has been talked about by the WEF (2020) stresses unpublicized work vacancies that go unrecognized. LayoffGuard facilitates covering this gap by bringing users in touch with these elusive work opportunities, broadening their scope of career possibilities.

- Whereas sites such as LinkedIn and Indeed provide job search capabilities, they tend to be non-personalized (Johnson & Patel, 2017). Drawing inspiration from Melki (2020), my study aims to offer personalized advice and resources for proactive career management.

- Lastly, Brynjolfsson and McAfee (2016) highlight the potential of AI to enhance employability through the analysis of data. LayoffGuard hopes to tap into this potential to build a comprehensive platform that helps job seekers navigate the intricacies of the changing job market.

In conclusion, the findings of numerous studies influenced LayoffGuard's creation and emphasized the necessity of creative remedies for job displacement, skills shortage, and the inadequacies of conventional job search. This research seeks to empower one to plan their career journey confidently in a fluctuating employment market.

IV. DISCUSSION

This section explains the expected findings, their implications, and limitations of the proposed study. It relates the findings to the existing literature and points out the likely contribution of the web application.

1. Interpretation of Anticipated Results

The output expected from usability testing and KPI tracking is that the web application can become an important tool for job candidates to use in their search for work in the changing job market. The projected high praise for ease of use and utility of principal features (analysis of skill gaps, job compatibility score, visibility into hidden job market) is that the application will find ready acceptance among its intended users.

The user interaction metrics that will be estimated (average session length, access frequency of features) will inform how users use the application and what features are most important to them. The accomplishment of the target satisfaction rates and job placement success would show the effectiveness of the application in enabling job seekers and their career aspirations.

2. Implications and Potential Impact

The effective deployment of the web application has a number of important implications:

- Reduced Job Displacement Anxiety: By providing real-time information on emerging skill requirements and personalized recommendations for upskilling, the application can alleviate job displacement anxiety and empower users to proactively manage their careers.
- Improved Skill Gap Identification: The AI-based skill analysis is expected to enable users to gain a clearer understanding of the skills they need to acquire to improve their job prospects, leading to more targeted and effective upskilling efforts.
- Augmented Career Counselling: The targeted career advising, tailored skill recommendation, employment compatibility scores, and personalized course proposals are likely to give the user a concise set of actions towards realizing his career aspirations.
- Hiding job market access: The app should guide the user towards finding hidden opportunities for work not posted traditionally, broadening their horizon to seek jobs outside published listings.
- Empowered Job Seekers: The end-to-end job search software, such as smart interview preparation, real-time salary data, and negotiation guidance, is crafted to empower individuals to negotiate their worth in an increasingly competitive labor market.
- Alternative Work Arrangement Support: Through the provision of resources and information specifically for people who are interested in freelance employment and remote work arrangements, the app is poised to support the increasing need for alternative work arrangements.

3. Relationship to Current Literature

The expected findings are in line with current literature regarding the limitations of job displacement, skill mismatch, and the failure of conventional job searching tools. The app's emphasis on AI-based analysis and individualized career advice is in line with the literature citing the potential of technology to bridge these limitations.

The application's focus on enabling entry into the dark job markets as well as for alternative work options fills a space in the existing literature. As a one-stop platform integrating the analysis of abilities, evaluation of risk, making of personalized choices, and exposing the job opportunity in concealed employment markets, this application is potentially capable of enhancing the domain of career development remarkably.

4. Limitations

This research has a number of limitations. Firstly, the effectiveness of the web application is judged from expected outcomes and intended analyses. Real outcomes can differ.

Secondly, usability testing sample size will be small. Although all possible attempts will be made to find a diversified set of test participants, results cannot be generalized to every job seeker.

Third, the application is restricted to the labor market. The application does not touch on more general issues related to economic inequality and social mobility.

5. Future Directions

Future studies might investigate the long-term effect of the web application on the career path and employment status of job seekers. It would also be beneficial to increase the scope of the app to cover more features, including mentorship schemes and career guidance services. Lastly, it is worth considering the ethical aspects of implementing AI in career progression, including ensuring that the algorithms employed in assessing skills and matching job aspirants with opportunities are fair and transparent.

V. CONCLUSION

In summary, this study investigates the creation of an AI-based web application that seeks to empower job seekers in an increasingly dynamic job market. By using advanced algorithms to examine skill trends, evaluate job stability, and offer tailored career advice, the application hopes to reduce job displacement fear and fill skill gaps. It provides an extensive set of tools, such as risk analysis, personalized skill suggestions, job compatibility scoring, interview preparation, and access to the hidden job market. In addition, the app assists individuals looking for alternative work arrangements and offers an AI-based career map. Although this study provides the data collection methodology, application development, and future assessment via usability testing and A/B testing, its central purpose is to develop an accessible platform that empowers individuals with the information and tools necessary to actively manage their careers, increase their employability, and effectively navigate the complexities of the contemporary job market with confidence. The eventual objective is to develop a more resilient and agile workforce that will be better placed to handle future challenges and prospects.

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