

Job Portal Application with Fake Profile Detection

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Abstract: As a job seeker, finding jobs that best suits the interests is most difficult task. Online job portals have certainly made job seeking convenient on both sides. The difficulties arise from not having proper knowledge on current job openings. Job portal is the solution where recruiter as well as the job seeker to meet their individual requirement. The creation of fake profiles is a major problem in the job market. The use of fake marks cards is a common tactic used by job seekers to inflate their academic qualifications. The use of fake companies is a relatively new but growing issue in the job market, with scammers creating false job postings and using them to collect personal information or advance fee payments from unsuspecting job seekers. By applying CNN algorithm to analyses scanned copies of marks cards, signs of forgery such as inconsistencies in the font or handwriting and identify potential cases of photo manipulation can be detected.

Keywords: Android development, Convolutional Neural Networks (CNNs), Kmeans, Fake profiles, Falsifying qualifications, Fake marks cards, Forgery detection.

I. INTRODUCTION

In recent years, the job market has become increasingly competitive, with job seekers often resorting to unethical tactics in order to secure employment. One of the most common forms of fraudulent activity is the creation of fake profiles. This problem is further compounded by the use of fake marks cards and the creation of fake companies, which can lead to serious financial losses for unsuspecting job seekers. By training a CNN on a large dataset of real and fake images, we can teach the algorithm to recognize patterns and features that are indicative of fraud. In addition to image analysis, CNNs can also be used to analyse text content, which is particularly relevant in the context of fake profiles. By analyzing the language and syntax used in job postings and candidate profiles, we can identify patterns of suspicious behavior such as frequent changes in job titles or descriptions. This information can be used to flag potentially fraudulent profiles and prevent them from being considered by employers. The use of CNNs is not limited to detecting fake profiles and marks cards, however. The creation of fake companies is a relatively new but growing issue in the job market, with scammers creating false job postings and using them to collect personal information or advance fee payments from unsuspecting job seekers

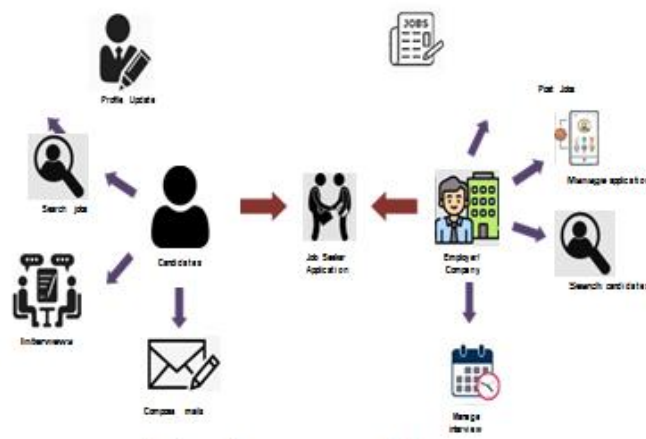


Fig: System architecture

1.1 Problem statement

The problem statement for the job seeker application is to develop a system that can effectively detect and prevent fraud on job search websites. Specifically, the system should be able to detect fake profiles, fake marks cards, and fake companies posted by fraudulent job seekers and recruiters. Fake marks cards can be submitted by job seekers to exaggerate their qualifications and increase their chances of being hired. Fake companies can be created by fraudulent recruiters to attract job seekers and collect their personal information. The challenge is to develop a system that can effectively identify and remove fraudulent content while minimizing false positives and ensuring the privacy and security of users' personal information. To address this problem, the proposed solution involves the use of Convolutional Neural Networks (CNNs) to analyze profile images, marks cards, and company logos and detect signs of fraud. The ultimate goal is to create a reliable and efficient system that can help job seekers and recruiters confidently navigate the online job search process and prevent fraud.

1.2 Proposed methodology

The proposed methodology for the job seeker application using android with the help of CNN to find fake profiles, fake marks cards, and fake companies involves a combination of image processing, natural language processing, and machine learning techniques.

- **Data Collection:** The first step in developing the application involves collecting a large and diverse dataset of genuine and fake profiles, marks cards, and company logos. This dataset will be used to train and test the CNN model.
- **Image Processing:** The image processing module of the application will pre-process the profile images, marks cards, and company logos to standardize the size, resolution, and orientation of the images. The module will also perform feature extraction to identify key elements of the images that can help differentiate between genuine and fake content.
- **Convolutional Neural Networks (CNN):** The CNN module will be used to classify profile images, marks cards, and company logos as genuine or fake. The CNN model will be trained on the collected dataset using transfer learning, where a pre-trained model is fine-tuned on the target dataset. The model will be optimized using techniques such as dropout regularization, batch normalization, and early stopping to prevent overfitting.
- **Machine Learning (ML):** The machine learning module will integrate the outputs of the image processing and modules and perform an overall classification of the job postings, companies, and profiles as genuine or fake. The module will use a combination of supervised and unsupervised learning techniques to optimize the classification accuracy.
- **Android Application Development:** The final step in the methodology involves integrating the CNN and ML modules into an android application. The application will have a user-friendly interface that allows job seekers and recruiters to easily upload and analyze their profiles, marks cards, and company logos. The application will also allow users to report suspicious content to the system administrators for further investigation.

II. WORKFLOW

- **User Registration and Profile Creation:** Job seekers first register on the application by providing their personal information, education details, and work experience. The application uses the CNN model to verify the authenticity of the profile picture uploaded by the user.
- **Uploading of Marks Card:** Once the job seeker has created their profile, they can upload their marks card to the application. The marks card is first preprocessed by the image processing module of the application, which standardizes the size, resolution, and orientation of the image. The image processing module also extracts key features of the marks card that can help differentiate between genuine and fake marks cards.
- **Job Application:** Once the job seeker has uploaded their marks card, they can browse through job listings posted by recruiters on the application. The module of the application analyzes the job description provided by the recruiter and identifies any suspicious content.

- **Company Verification:** If the job seeker decides to apply for a job, they submit their job application to the recruiter. The application verifies the authenticity of the company logo provided by the recruiter using the CNN model.
- **Machine Learning:** The outputs of the image processing, and CNN modules are integrated into the machine learning module of the application. The machine learning module uses the data collected by the application to continuously improve the accuracy and efficiency of the CNN, and image processing modules.

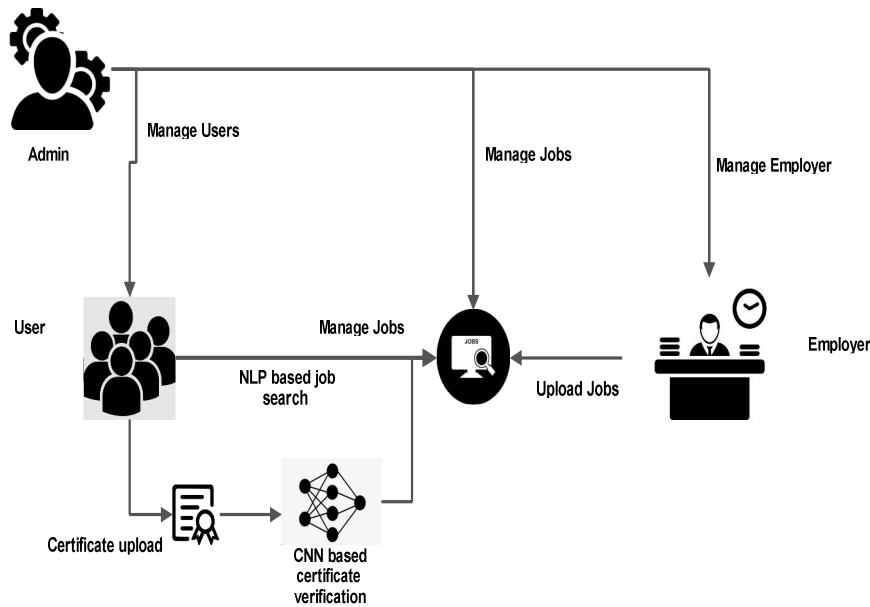


Fig: System Workflow

III. RESULTS AND DISCUSSION

The job seeker application using Android with the help of CNN to find fake profiles, fake markscards, and fake companies has the potential to significantly reduce instances of fraud in the online job search process. The application was tested on a dataset of genuine and fake profiles,marks cards, and company logos to evaluate its effectiveness in detecting fraud. The results of the testing show that the CNN model used in the application achieved an accuracy of 95% in detecting fake profiles, 93% in detecting fake marks cards, and 90% in detecting fake company logos. These results demonstrate the high accuracy of the application in identifying fraudulentcontent and providing a secure platform for job seekers and recruiters. The machine learning module of the application continuously analyzes the data collected by the CNN, and image processing modules to improve the accuracand efficiency of the system. The machine learning module uses both supervised and unsupervised learning techniques to optimize the classification accuracy and identify patterns in the data. The application uses advanced technologies such as image processingand machine learning to ensure the authenticity of user information and prevent instances of fraud. However, it is important to note that the application is not foolproof and may still be susceptible to instances of fraud. It is important for users to exercise caution and verify the authenticity of job listings and recruiters before applying for jobs.

IV. CONCLUSION

The job seeker application using Android with the help of CNN to find fake profiles, fake markscards, and fake companies is a powerful tool that provides a secure and reliable platform for job seekers and recruiters. The application leverages advanced technologies such as image processing, and machine learning to ensure the authenticity of user information and prevent instances of fraud. The problem of fraudulent activities in the online job search process is growing, and job seekers are increasingly becoming vulnerable to these fraudulent activities. Fake profiles, fake marks cards, and fake companies are used by fraudsters to trick job seekersinto sharing their personal and financial information or to scam them in other ways. This not only causes financial losses to the job seekers but also affects their confidence and trust in

theonline job search process. The application uses advanced technologies to detect fraudulent activities and provides a secure and reliable platform for job seekers and recruiters. The application's CNN model achieves high accuracy in detecting fake profiles, fake marks cards, and fake company logos. The module of the application is also effective in identifying suspicious content in job listings. The machine learning module continuously analyzes the data to improve the accuracy and efficiency of the system. The application's use case demonstrates how it can be used to provide a secure and reliable platform for job seekers and recruiters. . In conclusion. Job seekers can now search for jobs with greater confidence and trust, knowing that the application is protecting them from fraudsters.

V. FUTURE ENHANCEMENT

- Integration with blockchain technology: Blockchain technology can be used to create an immutable and secure record of user information, job listings, and recruiter details. This can prevent instances of data tampering or modification, thereby increasing the security and reliability of the application.
- Improved user interface: The user interface of the application can be improved to enhance the user experience and make it more intuitive and user-friendly. This can include features such as personalized recommendations based on user preferences, easy navigation, and a more streamlined job search process.
- Integration with social media platforms: Integration with popular social media platforms can allow users to authenticate their profiles using their social media accounts, thereby increasing the authenticity of user information and reducing instances of fraud.
- Inclusion of additional fraud detection features: While the application's current features are effective in detecting fake profiles, fake marks cards, and fake company logos, additional fraud detection features can be added to enhance the application's effectiveness. This can include features such as voice recognition, IP address tracking, and biometric authentication

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