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Job Recommendation System Using Social Media Analysis

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ABSTRACT: In India, only 1-2% of the total Software Engineering graduates find a job of their interest. The main reason of this crisis is the lack of passion, skill-set, Resources and the Academics required to come-up with the real-world requirements. A student or a developer may be passionate with his skills but usually academic grades are the basic criteria for the recruiters to hire a developer. Hence, keeping this problem in mind we intend to develop a single platform for both software developers as well as for the hiring institutes to make their job easier and less complex. This application will provide all the modern features of a social media for the developer to share his skill-set and problems to the IT community. This application will also consist various resources such as Build and Collaboration space where the developer would be able to analyze, manage and track his projects and skills. This application will also have another face which will be for recruiters. The recruiters will be recommended various developers according to their provided requirements. The recruiters can also use the Messaging platform to communicate with the fellow developers.

KEYWORDS: Collaborative filtering, job, Recruitment, recommendation.

I. INTRODUCTION

Recommender systems have been widely adopted by many online websites to help users overcome the information overload problem and make their purchase decisions. Popular recommendation techniques, such as collaborative filtering (CF) and content-based filtering, can be utilized in social media for users to search jobs. CF makes recommendations based on the assumption that users with similar ratings and interests for some items are likely to have similar preferences for other items. Content-based filtering assumes that the users' interests are able to be represented by the content of posts they have shown interest in, and those contents that have content descriptions similar to the target user's favourite jobs are recommended.

In this paper, we capitalize on user posts to understand the requirements from the users' perspective and leverage user reviews to develop a job recommender system. The topics hidden in the review texts can be a type of representation of the job features. The topic distributions of apps and user preferences are both considered when producing recommendation scores of the relevant jobs for the user to make personalized recommendations.

1.1. Problem Statement:

To develop a job recommendation system and integrated social media platform which is driven by machine learning and primarily focuses on the technical aspects.

1.2. Motivation:

Many a times student does not get an opportunity to showcase his/her skills in the real world due to college academic barriers. Hence, keeping this problem in mind we intend to develop a single platform for both software developers as well as for the recruiting institutes to make their job easier and less complex.

1.3. Objective:

- To develop a multi-application platform for recruitment of the developers.
- To develop a social media platform to build a community of the developers.

- A space to manage, track and showcase the skills and projects of the developer.
- A discussion and collaboration room for all the developers.
- An End-to-End Secured messaging system for both recruiters and developers.

II. RELATED WORK

A learning style questionnaire was presented to the students. Based on the results using Felder-Silverman learning style model, individual learning style of the student was predicted by authors S. Graf, Kinshuk, Tzu-Chien Liu, in the paper "Identifying Learning Styles in Learning Management Systems by Using Indications from Students' Behaviour" [2]. In this Rule based mechanism was used with some limitations such as only specific learning styles were considered. In the paper "Advanced Adaptivity in Learning Management Systems by Considering Learning Styles" by authors S. Graf and Kinshuk [3] adaptive learning mechanism which provides students with courses that best fit their individual learning style was provided where the technique Adaptive generic mechanism is used where constant track has to be maintained as the learning style of students changes.

Authors Y. Li and Z. Wang used Fuzzy sets to represent students' knowledge level and to dynamically update user stereotypes in the paper "Adaptive reinforcement Q-Learning algorithm for swarm-robot system using pheromone mechanism" [4]. Fuzzy Knowledge State Definer technique is used but here the change in the performance is dependent only on the systems elements.

Records of jobs are learned to establish user demand models such as job-resume matching model is achieved by authors Z. Wang and X. Tang in the paper "A Resume Recommendation Model for Online Recruitment" [6]. Genetic algorithm technique is used but performance and interest of the candidate are not considered.

In the paper "User Behavior Analysis and Commodity Recommendation for Point-Earning Apps" by authors Y. C. Chen, C. C. Yang, Y. J. Liao, C. H. Chang [7], several methods including a traditional classifier, heuristic scoring, and machine learning to build a recommendation system and integrate content-based collaborative filtering for a hybrid recommendation system using Co-Clustering with Augmented Matrices (CCAM) are used. Crawler is used to acquire regular customers' purchasing information, which can help to enhance prediction performance. The recommendation is done based only on user consumption and other factors such as time, region are not considered.

III. PROPOSED SYSTEM

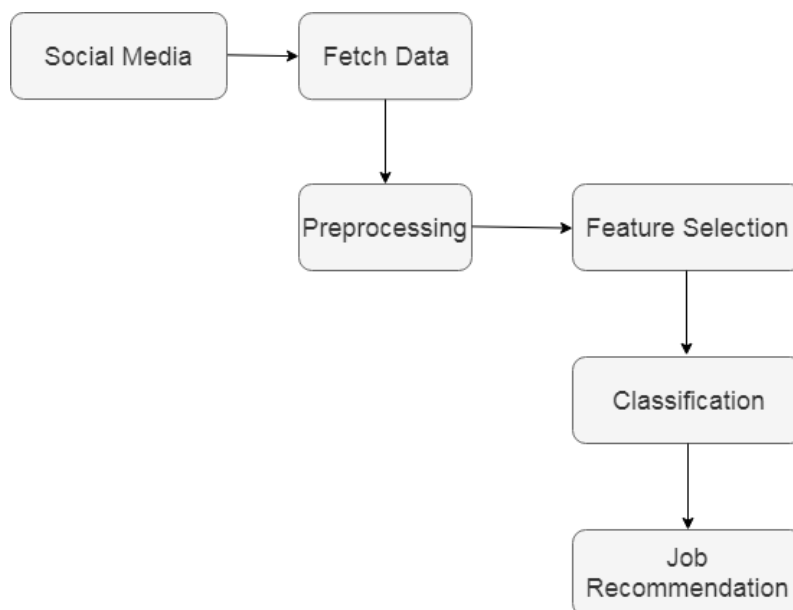


FIG 1. SYSTEM ARCHITECTURE

1. Content Aware collaborative filtering:

- Content-aware collaborative filtering is the integration of content-based recommendation and collaborative filtering.
- Our proposed algorithm targets content-aware collaborative filtering from implicit feedback and successfully address the disadvantages by treating the items not preferred by users as negative while assigning them a lower confidence for negative preference and achieving linear time optimization.
- Accuracy is high.

2. AES Algorithm for Encryption.

AES (advanced encryption standard). It is symmetric algorithm. It used to convert plain text into cipher text. The need for coming with this algo is weakness in DES. The 56 bit key of des is no longer safe against attacks based on exhaustive key searches and 64-bit block also consider as weak. AES was to be used 128-bit block with 128-bit keys.

Rijndael was founder. In this drop we are using it to encrypt the data owner file.

Input:

128_bit / 192 bit / 256 bit input (0, 1)

Secret key (128_bit) + plain text (128_bit).

Process:

10/12/14-rounds for-128_bit / 192 bit / 256 bit input

Xor state block (i/p)

Final round: 10, 12, 14

IV. IMPLEMENTATION

Module:

- Recruitment Platform
- Social media
- Build and Collaboration Platform
- Messaging Platform

1. Recruitment Platform

- This module will recommend personalised jobs and openings according to the resume, projects and the social media analysis of the developer.
- In this module the analysed data gathered from the developer's social media behaviour will be used for recommending personalised jobs using the COLLABORATIVE FILTERING (CF) and PERSONALISED FILTERING (PF) based Machine Learning Algorithms.

2. Social media Platform

- In this module the developer can connect with other developers and recruiters to share and showcase their skillsets and achievements.
- User can post media such as audio, Picture, video, documents and links on the platform.
- This Platform will analyse the interest and behaviour and will help in further recommendation.

3. Messaging Platform

- The messaging platform will help the developer to communicate with other developers via Text and Multimedia.
- The messaging will be Secured by using ADVANCE ENCRYPTION STANDARD (AES) Cryptographic Algorithm
- This platform can also be used by the Recruiters to communicate with the developers (Not vice-versa).



V. RESULT

User Sign In

[New Registration ?](#) [Forgot Password ?](#)

Upload Job Requirements



Search Friend

Search

View Recommendations

Job Requirement: Java Developer
Years Of Experience: 2
Skills: java,jsp servelt
Job Description: need java developer

Job Requirement: Infosys pvt ltd
Years Of Experience: 2
Skills: java,jsp servelt
Job Description: need java developer

View Posts

Mayank Agrawal



Hello...im new here

Rajat Mishra



Hey, I'm new here

VI. CONCLUSION

In India, only 1-2% of the total Software Engineering graduates find a job of their interest. The main reason of this crisis is the lack of passion, skill-set, Resources and the Academics required to come-up with the real world requirements. A student or a developer may be passionate with his skills but usually academic grades are the basic criteria for the recruiters to hire a developer. Hence, keeping this problem in mind we intend to develop a single platform for both software developers as well as for the hiring institutes to make their job easier and less complex. This application will provide all the modern features of a social media for the developer to share his skill-set and problems to the IT community. This application will also consist various resources such as Build and Collaboration space where the developer would be able to analyse, manage and track his projects and skills. This application will also have another face which will be for recruiters. The recruiters will be recommended various developers according to their provided requirements. The recruiters can also use the Messaging platform to communicate with the fellow developers. Future Scope: Furthermore, we intend to continue to explore new problems from the point of view of a social network service provider, such as Twitter or Instagram, to improve the well-being of OSN users without compromising user participation.

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