

# Recruitment Using Machine Learning

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## ABSTRACT

The aim of this project is to develop an online recruitment portal for the employer and the job aspirant. The System we have designed is a website which has a user login and an employer login. The project has been organised to solve the problem in the existing system where in the existing system includes conventional procedures which are deliberate and difficult. Now that internet is available to all , job aspirants respond on the online job portals it makes the job search systematic and well organised for the aspirant. It assists the recruiter find the talent they need and also assists the job aspirants to find current vacancies at one place. In addition to this, a course page is also provided on the portal where in if an applicant lacks certain skill set that is required by the organization , then he can take a course for that and when completed can apply again for the organization. The proposed system uses word cloud to fetch skills from the resume of the applicant and matches it with the skills required by the employer for the job. From candidate hiring to job listing various features have been provided on the portal.

## I INTRODUCTION

Online recruitment is a procedure of hiring employees by utilising various web based assets and softwares into your organization. Recruitemp is a web portal which helps the job aspirants to look out for available job vacancies and employers to recognise qualified job aspirants with the expectation of picking up the most professional candidate. There is only one way to select the finest qualified candidate which is by drawing out attentiveness of the aspirants in the market . Many recruiters are so far utilising the internet for the recruitment of employees. The internet is available to all but there is nothing new in it , still the reality remains alike that online recruitment is there to protect many different zones. so being ready to give out the good and bad of the procedure is passing to be condemning. E-Recruitment has enhanced the quality methods for employers and job aspirants to connect their particular intentions. With the development in technology and extension of internet consumption , the e-recruitment has transformed the procedure organisations hire and candidates look out for jobs and available vacancies.

## II LITERATURE SURVEY

[1] In this study it is found that in manual process it is bound to happen that the seeker may not get an offer that exactly matches his/ her profile. Due to this lack of information person lost an opportunity and the company loses potential applicant for the job post. Thus currently there is a definite need for a computerised online system where in both applicant and the company can come closer.

[2] The authors begin by noting that recruitment and selection are critical functions in any organization, and that advances in technology have led to the emergence of online recruitment as a popular method for attracting and selecting job candidates. The paper presents an overview of the various technologies used in online recruitment, including job boards, corporate websites, and online applications. The authors then discuss the advantages and disadvantages of online recruitment, noting that it offers several benefits such as cost savings, wider reach, and greater efficiency, but can also pose challenges related to data privacy and candidate screening. The paper then explores the impact of online recruitment on candidate behavior and employer practices. The authors argue that the ease of applying for jobs online has led to an increase in the number of applications received by employers, and that this has in turn led to a greater emphasis on automated screening and selection methods.

[3] The study discusses the growth of online recruitment and selection, and highlight the advantages and disadvantages of using online methods. It reviews the literature on online recruitment and selection, focusing on key themes such as the use of technology, the impact on job seekers and employers, and the ethical issues involved. The study identifies several gaps in the research on the use of mobile technology in

recruitment, the impact of social media on candidate selection, and the ethical implications of using algorithms and big data in recruitment. Overall, the paper provides a

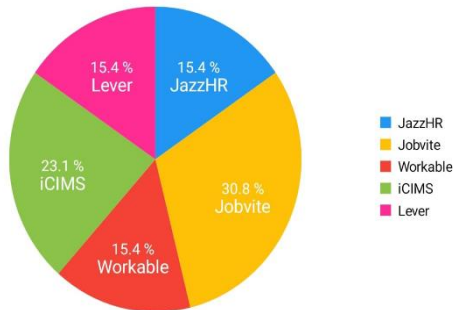
comprehensive overview of the literature on online recruitment and selection, and highlights the need for further research in this rapidly evolving area.

[4] In this it is found that traditional recruitment methods often rely on subjective decision-making and are not based on a rigorous analysis of the data. To address this issue, the authors propose a prescriptive analytics approach that uses machine learning algorithms to identify the key factors that contribute to successful recruitment. The paper describes a mathematical model that incorporates both quantitative and qualitative data to predict the likelihood of a candidate's success in a particular job. The model uses machine learning techniques to analyze data from a variety of sources, including resumes, social media profiles, and job performance metrics. Overall, the paper demonstrates the potential of prescriptive analytics, machine learning, and mathematical programming to improve the efficiency and effectiveness of employee recruitment.

[5] The paper provides an overview of the recruitment and selection process, starting from identifying the job requirements to hiring the right candidate. The authors discuss the various sources of recruitment, such as job portals, social media, and employee referrals, and analyze the advantages and disadvantages of each source. Overall, the paper provides a comprehensive overview of the recruitment and selection process in organizations, and highlights the challenges and strategies involved in this process.

### III COMPARATIVE ANALYSIS

A rough estimate of the market share percentage for each online recruitment system



### IV PROBLEM STATEMENT

In offline recruitment if a company is hiring for a particular job and if a candidate is looking for a job and if he has got skills he can work for the company but it may also happen that if a candidate does not have required skill sets but still he would be able to do the work so in that case the company loses a potential candidate and the candidate loses an opportunity as well. In the existing system there are various web portals and apps available but they have their own sets of problems, they have messy user interface which is quite tough to comprehend. Many times it happens that the job recruiters and job applicants have to do a lot of probing to actually get around what they had in mind. There are very conversation options available for the trainees. If a candidate is lacking a skill set required by the organization then there has to be a training program or course which can be made available to job aspirant on the portal so that he can hone his skills and reapply again for the organization. Sometimes it also happens that applicants are not made fully aware about the specifications of the job, most often they are kept in dark of what is actually expected from them.

### V DETAILS OF HARDWARE AND SOFTWARE

#### Hardware Requirements :

- 4 GB RAM
- Intel core i5 or higher
- At least 2GB of free space
- Windows 10, macOS or Linux

#### Software Requirements :

- Visual Studio Code
- React js
- Node js
- Python

### VI BLOCK DIAGRAM

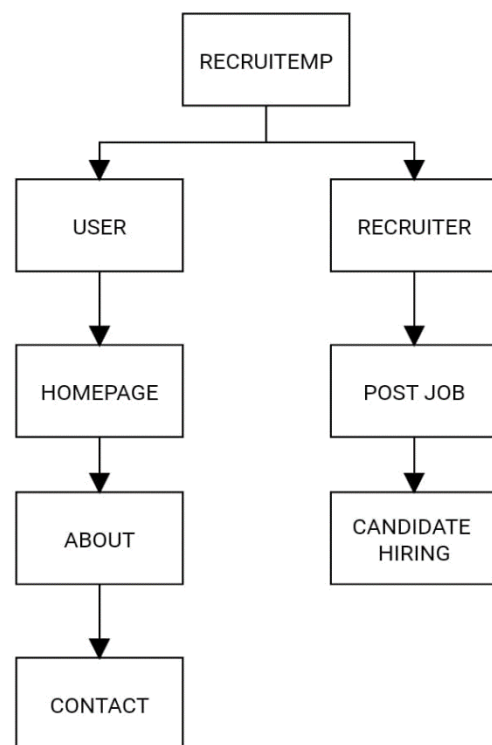


Fig.1 – Block diagram

Recruitemp has two logins one for the job aspirant and other for the recruiter to post jobs. The job aspirant has options like exploring the homepage, job lists and etc. The recruiter has options to post jobs and hire candidate.

## VII WORKING

Recruitemp was developed using React and Python. Upon reaching the homepage, users will find a help bar containing keywords, categories, locations, and a search button. The website can be explored through various categories, such as marketing, customer service, human resources, projects, sales and communication, teaching and education, design and creativity, and many others. The job listing section features a variety of job types, including featured, full-time, and part-time positions, such as software engineers, marketing managers, product designers, creative directors, and WordPress developers. The navbar on the homepage offers options to access jobs, services, courses, products, and login. The job section includes job listings and job details, while the services section offers a "get a job" subcategory. The course section presents several courses, such as web development, digital marketing, advanced Excel, business analytics, AutoCAD, data science, graphic design, and creative writing. The product section includes options for candidate sourcing, AI recommendations, posting jobs, and support and assistance features. Candidate sourcing tools help find intelligent candidates, while AI recommendations automatically suggest jobs based on the user's information. The support and assistance feature is available to help with any issues the applicant may face, such as building a resume. A resume builder has been implemented on recruitemp to help users build their resumes quickly and effectively. Recruitemp offers two logins: one for job seekers and one for employers to post jobs. Job seekers must log in using a valid email address and password, and fill in details such as their city of residence and phone number. Once logged in, job seekers can search for jobs from various options listed in the job listing section and apply for the job they are interested in. In the apply section, they must upload their resume, and a word cloud will begin analyzing the skills present in the resume, matching them with the required skills by the recruiter. If the applicant's resume matches the required skill set, it will be sent to the employer for review. If the employer is interested, they can test the applicant on the recruitemp

portal. Based on the score the applicant receives, the employer may choose to call them for an interview. If the candidate passes the interview, they will be offered the job, and an offer letter will be sent to them by the employer.

## VIII RESULTS

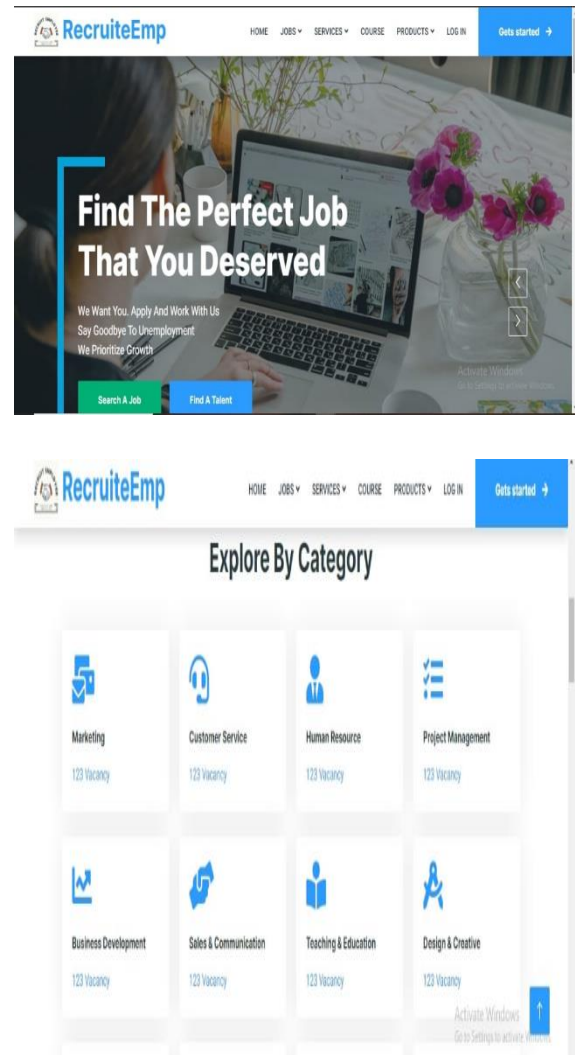


Fig.2 - Homepage

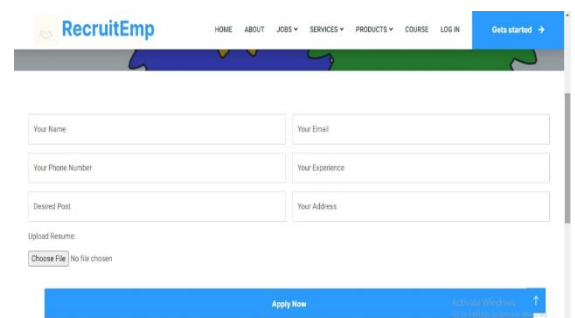
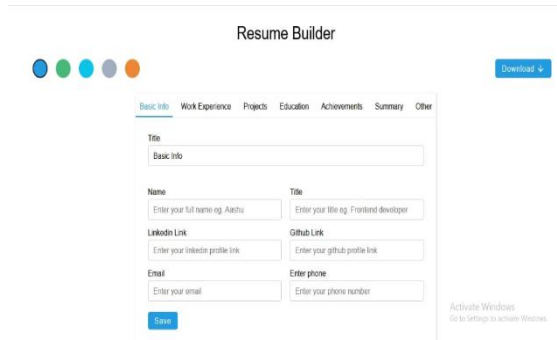


Fig.3 – Apply Job Page



The screenshot shows a web-based 'Resume Builder' interface. At the top, there are four colored circles (blue, green, yellow, orange) and a 'Download' button. Below this is a navigation bar with tabs: 'Basic Info', 'Work Experience', 'Projects', 'Education', 'Achievements', 'Summary', and 'Other'. The 'Basic Info' tab is active, showing a form with fields for 'Title', 'Name', 'Title', 'LinkedIn Link', 'GitHub Link', 'Email', and 'Enter phone'. A 'Save' button is at the bottom left, and a 'Activate Windows' watermark is at the bottom right.

Fig.4 – Resume Builder



Fig.5 – Candidate Sourcing Page

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## IX CONCLUSION

Recruitemp portal rests as a transforming part in the domain of recruitment. It behaves as a transmission crossover between the aspirants and employers easing their necessities. Recruitment assist organisations to have a considerable submission to the candidate pool and also aspirants easing broad search complementing their interests. Recruitemp allows an intensifying user experience for both the employer and the job aspirants.