

**SKILL AND JOB RECOMMENDER USING
CLOUD COMPUTING**

NALIYATHIRAN PROJECT BASED LEARNING

on

**PROFESSIONAL READINESS FOR INNOVATION, EMPLOYABILITY AND
ENTERPRENUERSHIP**

A PROJECT REPORT

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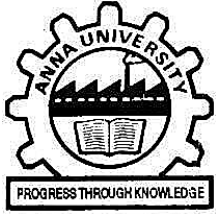
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ABSTRACT

Machine learning is a sub-field of data science that concentrates on designing algorithms that can learn from and make predictions on the data. Presently recommendation frameworks are utilized to take care of the issue of the overwhelming amount of information in every domain and enable the clients to concentrate on information that is significant to their area of interest. One domain where such recommender systems can play a significant role to help college graduates to fulfill their dreams by recommending a job based on their skill set. Currently, there are plenty of websites that provide heaps of information regarding employment opportunities, but this task is extremely tedious for students as they need to go through large amounts of information to find the ideal job. And many students are not aware of which job is suitable for them. Nowadays, the IT fields are in a boom. Many engineering students are learning some technical skills by doing some courses but they don't know which skill is for which job. Simultaneously, existing job recommendation systems only take into consideration the domain in which the user is interested while ignoring their profile and skillset, which can help recommend jobs that are tailor-made for the user. This paper examines the user's resume then compares the knowledge of degree, soft skills, hard skills, and the projects he has done and then only the system recommends the jobs for that user. The system not only recommends the jobs but also shows the score of his/her resume for the respective job. Then, the system also recommends skills to improve the scores of their

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Problem Statement Definition:

In the last years, job recommender systems have become popular since they successfully reduce information overload by generating personalized job suggestions. Although in the literature exists a variety of techniques and strategies used as part of job recommender systems, most of them fail to recommend job vacancies that fit properly to the job seekers profiles. Thus, the contributions of this work are threefold, made publicly available a new dataset formed by a set of job seekers profiles and a set of job vacancies collected from different job search engine sites, put forward the proposal of a framework for job recommendation based on professional skills of job seekers, and carried out an evaluation to quantify empirically the recommendation abilities of two state-of-the-art methods, considering different configurations, within the proposed framework. Thus present a general panorama of job recommendation task aiming to facilitate research and real-world application design regarding this important issue. Job matching, job seeking, job search, job recommender systems. Proposed a framework for job recommendation task. This framework facilitates the understanding of job recommendation process as well as it allows the use of a variety of text processing and recommendation methods according to the preferences of the job recommender system designer. Moreover, we also contribute making publicly available a new dataset containing job seekers profiles and job vacancies. Future directions of our work will focus on performing a more exhaustive evaluation considering a greater amount of methods and data as well as a comprehensive evaluation of the impact of each professional skill of a job seeker on the received job recommendation.

EXISTING PROBLEM:

The major contribution of this work is as follows: The large MNC businesses use the mechanism currently in place for employment recommendations. The method is employed by businesses, not by regular people. If not, they will charge a small subscription fee to check the user's career options. The system functions for the average guy from city to village to modify this predicament. Because the students would look for employment based on their own skills, this approach will reduce unemployment. This company will also grow more quickly, which will result in more job openings. The goal of the proposed work is to suggest a job that is ideal for the user. It displays the hierarchical jobs that are best for the user, not just one job. Additionally, it suggests skills for the jobs that were suggested for the user. This project is intended for someone who simply has no idea what they are going to do. Additionally, there are no logins available because doing so increases the likelihood that users would reject you. The subsequent chapter goes over the specifics of the implementation. The rest of the paper organizes as follows: Chapter 2 provides the literature review conducted for this project. Chapter 3 presents the System Design and Architecture of the project along with the methodology. Chapter 4 discusses the algorithms proposed in this project. Chapter 5 presents the project conclusion and future works on this project.

IDEATION & PROPOSED SOLUTION

3.1. EMPATHY MAP:



Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

- 1. [50 activities](#)

- 1. [Team gathering](#)
Before you start participating in the session and work on these. These increase collaboration in your work ahead.
- 2. [Set the goal](#)
Think about the problem you'll be focusing on solving in the brainstorming session.
- 3. [Spark ideas to use the facilitation tools](#)
Use the facilitation tools to generate as many as you can and produce solutions.

[Open article](#) 

Define your problem statement

What problem are you trying to solve? Frame your problem as a five-sight five statement. This will be the focus of your teamwork.

5 minutes

Problem

The search for water over the continental divide is imperative for our support of British lawmakers.

Key rules of brainstorming

To use an answer and produce no answer

- Keep it simple
- Encourage wild ideas
- Defer judgement
- Go for volume
- One idea at a time
- Build on others
- If possible, do it now

[illegible]

Need some inspiration?
Take a 10-minute break, go for a walk, or do some other activity to refresh your mind.



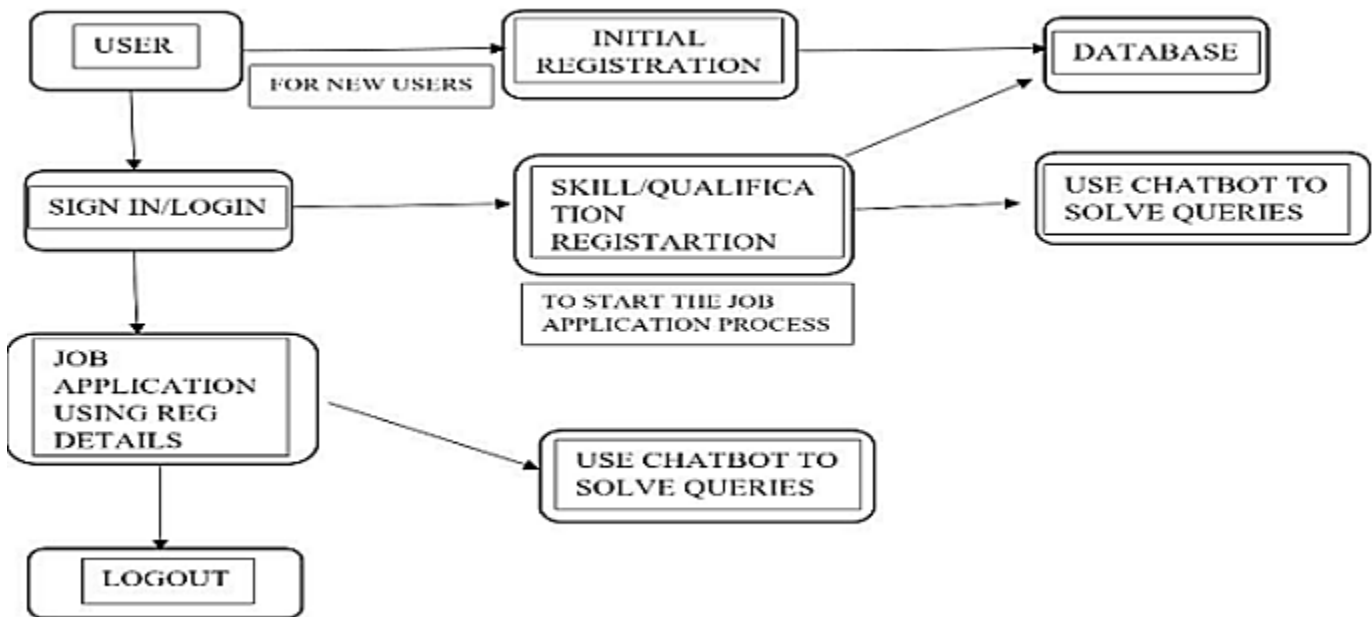
PROBLEM SOLUTION FIT:

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it actually solves the customer's problem. It helps entrepreneurs, marketers and corporate innovators identify behavioral patterns and recognize what would work and why Purpose: ☐ Solve complex problems in a way that fits the state of your customers. ☐ Succeed faster and increase your solution adoption by tapping into existing mediums and channels of behavior. ☐ Sharpen your communication and marketing strategy with the right triggers and messaging. ☐ Increase touch-points with your company by finding the right problem-behavior fit and building trust by solving frequent annoyances, or urgent or costly problems. ☐ Understand the existing situation in order to improve it for your target group.

Define CS, fit into CC	1.CUSTOMER SEGMENTS 1) Jobless people 2) New college grads	6.CUSTOMER CONSTRAINTS For the website to operate as intended, basic needs such an internet connection and laptop are required.	5.AVAILABLE SOLUTIONS Earlier, job seekers used TV adverts and paper columns, as a result of the expanding digital world,the use of suggestion websites.	Explore AS,differentiate
focus on J&P,tap into BE,	2.JOBS-TO-BE-DONE/PROBLEM Make some work recommender site with an inbuilt chatbot help	9.PROBLEM ROOT CAUSE The vast majority don't know about their positions accessible in the market/sites	7.BEHAVIOURS The users attempt to first analyse job searches on websites, papers, and adverts depending on their requirements.	focus on J&P,tap into BE
Identify strong TR&EM	3.TRIGGERS Seeing other find a new line of work 4.EMOTIONS:BEFORE/AFTER User will be satisfied with the services and higher possibility of job offer	10.YOUR SOLUTION To build a platform that helps freshersand under graduates to get a job	8.CHANNELS OF BEHAVIOUR ONLINE : Ready to explore a suitable job based on their skill sets and necessities OFFLINE : Attend interviews on-siteand try and get a job	Identify strong TR&EM

DATA FLOW DIAGRAMS:

Data Flow Diagrams: A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored. It shows how data enters and leaves the system, what changes the information, and where data is stored. The objective of a DFD is to show the scope and boundaries of a system as a whole. It may be used as a communication tool between a system analyst and any person who plays a part in the order that acts as a starting point for redesigning a system. The DFD is also called as a data flow graph or bubble chart.



Condition", IEEE Bombay Section Signature Conference (IBSSC)", pp. 175- 179, 2020, doi:10.1109/ibssc51096.2020.9332162. [17] M. Alamelu, D.Sathish Kumar, R. Sanjana, J.Subha Sree, A.Sangeerani Devi, D. Kavitha, "Resume Validation and Filtration using Natural Language Processing", 10th International Conference on Internet of Everything, Microwave Engineering, Communication and Networks (IEMECON), pp. 412-430, 2021, doi:10.1109/IEMECON53809.2021.9689075. [18] Swaranjali Jugran, Ashish Kumar, Bhupendra Singh Tyagi, Mr. Vivek Anand,"Extractive Automatic Text Summarization using SpaCy in Python & NLP", International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE), pp. 582-585, 2021, doi:10.1109/icacite51222.2021.9404712. [19] S. Prathyusha, S. Jadhav, K. Kommu, M.S. Velpuru, "Text summarization using NLTK with GUI interface", 4th Smart Cities Symposium (SCS 2021), pp. 435-442, 2021, doi: 10.1049/icp.2022.0369. [20] Meenakshi A. Thalor, "A Descriptive Answer Evaluation System Using Cosine Similarity Technique", International Conference.

THANK YOU