



”AI-Driven Career Path Prediction: A Machine Learning Approach” Ms. Akanksha Patil Ms. Sandhya Adamapure

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relies on their career decision. Making the best profession choice is the hardest decision in today's environment. These days, a lot of students are confused about their future. They do possess some skills but they are not able to identify their abilities and a proper domain. Different people suggest different career options but at last, the choice of career must be made by the student. We have concentrated on the issue of the student utilizing machine learning in this project. We will assist the learner in making a decision with the use of machine learning. It uses several machine learning approaches to determine which is the best domain and career option for them. The academic data that the student fills out determine their career with the aid of this project, the student will be able to focus on a certain area that best suits their abilities. *Index Terms*—Machine Learning, Web Development, Course

Recommendation System, career Prediction

I. INTRODUCTION

Career guidance can be defined as a journey where in students familiarize themselves with diverse career options, explore job opportunities and equip themselves for those prospects. Career counselling is the approach that will allow the students to understand his option, find his best skills and get acquainted with the workplace in order to make choices about employment, education and life. Competition in today's society is growing rapidly. Its too challenging in the present day to confront the technical environment. So as to compete and reach the goal of students, they need to be planned and organized from the initial and final stages of their education so its important to perpetually assess their performance, establish their interests and access how close they're to their goal and access whether or not they are within the right path that directs towards their target. This helps them in improving themselves, motivating themselves before going to the career peak point. Not only that, recruiters while recruiting people into their companies evaluate candidates on different parameters and draw a final conclusion to select an

Abstract—College students' life planning heavily employee or not and if selected, finds conclusion to select an employee or not and if selected, finds pupils a career field and stream that is relevant. Roles such as database administrator, business process analyst, developer, testing manager, networks manager, data scientist, and so on come in a variety of forms. Prior knowledge is necessary for all of these roles in order to be filled. So recruits analyze candidates performance in skills, talents and interests and place the candidates in the right job role suited for them. Prediction system of this nature streamline recruitment tasks significantly. As inputs are provided, recommendations are generated is done based on those inputs, simplifying the recruitment process. Though the career counselors may assist the students many times it would be difficult for them to completely understand the inclination of the students, academics and thus the counseling process may be limited. Also, not all students would be privileged to avail of such facilities. Globally there are some attempts in this area, but we need to work on this area for our students. Hence we would be working on the web based application referred as "Intelligent Career Planning and Guidance Assistance". the proposed solution is web based application for engineering students early enough to:

- Understand their inclination
- Enhance understanding of their personality type
- Educate on their various option
- Enables them for their career planning, development, and guidance
- Provide guidance of continuous basis

II. LITERATURE SURVEY

Fuzzy logic-based career path suggestion system. Recommendation system are widely employed on the internet to assist customers in discovering products or service that align with their individual preference. In Malaysia, the decision making process for students in selecting a career is crucial, given the

diverse range of human abilities. [1]

A technique for recommending courses based on a student's career interests. This essay introduces a method for recommending courses. The purpose of this research paper is to propose a personalized career path recommender system to assist high school students in selecting an engineering major. [2]

A Course recommendation system based on career interest. This essay introduces a method for recommending courses that aims to improve students career readlines by suggesting relevant skills and courses based on their unique career interest. [3] Recommendation system for career path using data mining approach. In today's context, selecting a career has evolved into a challenging and problematic undertaking, particularly for new candidates. Choosing a career can be succinctly described as a pivotal decision that individual make at a young age. [4] A customized course suggestion the career goals. Recommendation system have become popular and incorporated into numerous application that we utilize on daily basis. This proof of concept approach demonstrates that course that are suggested to users with a specific career goal add key skills that are trending in the market to their list of qualification. [5] The creation of recommended professional paths Higher Education using Expert System Model. This article discusses creation of students career recommendation system, an educational innovation designed to aid students in strategizing their career options [6] Hybrid filtering system for job recommendation. In the modern era, applying for jobs can be regarded as one of the most challenging processes. It assist the user to overcoming these difficulties by matching their work, experience and skills. [7] International career Handbook Guidance is the International Handbook for Career development. The project of international professional cooperation is represented by guidance. [8]

III. PROPOSED SYSTEM

We provide a career advising method for CS/IT students that are unsure about their future direction. This system's contribution is to assist these pupils in receiving guidance through a standard method and uncovering their hidden core competencies. We want the students not to get confused between so many fields. We want to make it easy for the students by recommending them three fields which are most suitable for them based on their input. Our proposed system takes inputs from GUI can process it and gives three job fields. It also takes feedback from students about their satisfaction by the output so that we will get to know where to improve our system. We are also sending them the mail report of their career choice and will mail them after their graduation to get to know are they satisfy with their career path. This feedback system will help us to make our system more and more rigid.

IV. SYSTEM IMPLEMENTATION

A. Collection of Data

The collection of data is one of the major and most important tasks of any machine learning project for feeding the algorithm with correct data. So, the efficiency and accuracy of the algorithm depend upon the correctness and quality of data collected. Numerous factors are needed to forecast a student's career, including the student's academic standing across a range of subjects, personality attributes like hobbies,

hackathons, and interests, among many others. As all these factors are essential in deciding student's progress towards a career area, all these are taken into consideration. Data is collected in many ways. Totally 20 thousand records with 21 columns of data are collected. *Registration and Login*

The students would be registered through a very simple method either by email id or Mobile number. The login credentials would be created and would be validated through every login attempt. Students Can See Various Fields.

B. Discover yourself

This section would enable the students to take a few tests to discover themselves in terms of their ability, interests, inclination, future plans etc. This would create a Student profile which would be used as a baseline for suggesting the possible career options. We will leverage the AI ML techniques to predict the way forward.

C. Data Preprocessing

We preprocess the data into required format. For Example, the data in data set will be stored in the form of words, nothing but alphabetic. We convert those into numerical format.

D. Predicting the Skills

from the Data By applying various machine algorithms on the data set ,we found more accuracy. At any one algorithm ,thus it suits for the recommendation system to be accurate.

E. Recommend the respected skill

Individual students differ from the other students in their skills. Recommendation system helps to predict the inherent skill of a student and recommend the respected skill courses.

F. Knowledge Networking

As the name indicates, this module would assist to harness the knowledge through various sources. This would also have a section to provide the information by students, which would be made available only post scrutiny by the Admin team.

G. Daily bytes

This would be displayed as a daily important tip to create interest among the students and to spend time to leverage this platform.

V. ALGORITHM

A supervised machine learning technique known as the K-nearest neighbors(KNN) algorithm is useful for both regression prediction and classification tasks. The KNN algorithm classifies a new data point based on similarity, assuming that the new case and the current examples are comparable. It then places the new case in the category that most closely resemble the available cases. This means when new data appears then it can be easily classified into a well suited category by using KNN algorithm KNN is a non-parametric algorithm, which means it does not make any assumption on underlying data.

The KNN working can be explained on the basis of the below algorithm:

Step 1: 1: Decide which neighbor's number is K.

Step 2: Determine the K number of neighbors' euclidean

distance. **Step 3:** using the computed Euclidean Distance, select the K closest neighbors.

Step 4: Determine how many data items are in each category among these K neighbors.

Step 5: Put the additional data points to the category where the neighbors count is at its highest..

Step 6: We have our model ready.

The main advantage of KNN algorithm is it is versatile algorithm as we can use it for classification as well as regression.

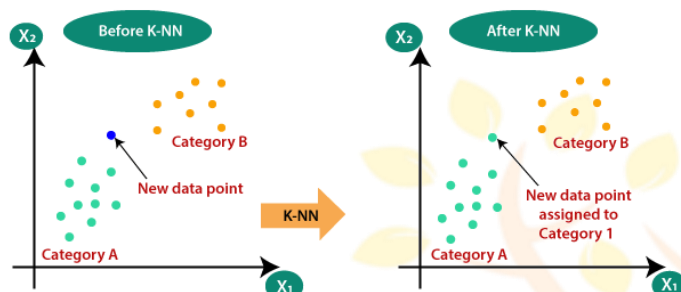


Fig. 1. KNN

VI. CONCLUSION

The paper suggest a career guidance system that employs Machine Learning for predictive purpose. It is most Effective and efficient System, which will be used by any Engineering Students of CS/IT(currently in final year or completed graduation) to evaluate their latent, skills and which particular Career path to choose from numerous Career Paths available. This System is developed as per user requirements and provides an excellent user interface experience.

VII. FUTURE SCOPE

The Education Field is evolving day-by-day with the introduction of internet and availability of study materials, videos and numerous tutorials. This website will also be used to provide these study material, tutorials on our website. If user wants to continue further studies on the Guidance provided by our site. With the revolutionary changes occurring in Engineering Fields, numerous Engineering fields are availble, we will expand our scope by providing Guidance to other fields such as mechanical, Electrical, Civil etc. including CS/IT chatbot will be used for interaction with human beings.

VIII. REFERENCES

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