



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

WEB BASED SCIENTIFIC CAREER COUNSELLING SYSTEM

Sana Thamke, Ashlesha Talankar, Vaishnavi Wadhale, Snehal Baghile, Tanuj Manekar

Guided By: Prof. S.N.Sawalkar

Department of Computer Science and Engineering
Sipna College of Engineering and Technology,
Amravati, India

Abstract:

Web Based Career Guidance is very important to our Educational System. We have an existing Manual Career Guidance System with human counselors in charge, but this system is plagued with the following problems: few number of human counselors, unavailability of a counselor in a good number of college, few number of counselors attending to students during college hours and the office of a counselor in colleges are so unpopular that students hardly meet them for career counseling. We have been able to design an Online Career Guidance Information System targeting students in pre institutions to solve the aforementioned problems. The Online Web Based Career Guidance System was designed and implemented using data collected from Kaggle. The following languages were employed: PHP, MySQL, HTML, Java Script, CSS, NODE JS, EXPRESS, BOOTSTRAP.

Keywords: *Counseling System, Naive Bayes, Career Analysis, Data Evaluation, Survey, Predictor*

INTRODUCTION

When it comes to choosing a career it's not only on what course you choose, it's more than what you want to become after your graduation. Career counseling is more about knowing and understanding about yourself and your capabilities and abilities. It helps students to choose the right career path based on their educational and professional choices. It is a qualitative and quantitative assessment of their knowledge, information, skills and experience to recognize available career options for them. It is this time every student gets a lot of guidance from various circles (parents, teachers, other educational specialists, etc.) and accordingly the student decides about which course they want to join. Many times, we have come across a situation where a student opts for a course/stream and later repents for having chosen the one. To quote an example, there is a myth that one who does very well and scores highest marks in 12th grade chemistry will tend to choose chemical engineering because they are good in chemistry, however in reality that is not the case. We had multiple rounds of deliberation with students who are currently doing their engineering and students who are currently in 11th and 12th grade. Then we came up with an idea of providing an objective assessment of one's skill set and caliber that recommend a right stream to choose and hence we picked this as our problem statement and started thinking through how we can help the students in addressing this question.

As a first step we came up with broader skill sets which are strongly essential for department in engineering such as Communication Engineering. We will analyse their skill sets and predict which department is suitable for an individual. If one uses this functional chart to answer all these questions, the failure rate will drastically reduce in picking up the wrong choice. Our pointed questions will identify the core strength of the student's particular skill sets.

LITERATURE SURVEY

Models, research papers and several guidance systems have previously been implemented and discussed. These were the ones that talked about replacing the actual education system wherein a student would be given their career paths based on their academic performances. The GPAs were the direct metric and none of the personal skills or other capabilities was considered. The newer ones did consider the latter two but did not make use of any historical data.

There are also other monitoring systems that focus on providing one to one guidance to the students who have not been able to smoothly transition into the career paths that they have chosen. These systems are designed in such a way that for each unique individual there was a list of mentors that they could choose from. However, we have proposed an automated self-monitoring and self-assessing system wherein the individual, if very determined, could program his progress.

There have been discussions made over the impact of MOOCs. We have provided MOOCs and certification recommendations based on what the career path the individual gets as the result after taking the self-assessment test.

SYSTEM ARCHITECTURE

First of all, Students will register themselves on the website, if they are new on the website then student will login themselves on the website. Once their registration and login will be completed, then they can fill up the form according to their respective knowledge, then the machine will give response over the provided information of their respective stream.

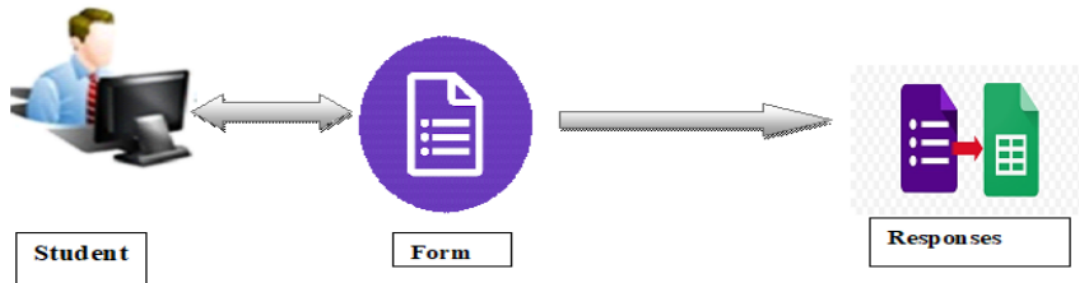


Fig. Counseling System Architecture

OBJECTIVE

Career guidance is the guidance given to individuals to help them acquire the knowledge, information, skills, and experience necessary to identify career options, and narrow them down to make one career decision. This career decision then results in their social, financial and emotional well-being throughout. We came up with an idea of providing an objective assessment of one's skill set and caliber that recommend a right stream to choose.

METHODOLOGY

System Algorithm

Naïve Bayes algorithm is a supervised learning algorithm, which is based on Bayes theorem and used for solving classification problems. It is mainly used in *text classification* that includes a high-dimensional training dataset. Naïve Bayes Classifier is one of the simple and most effective Classification algorithms which help in building the fast machine learning models that can make quick predictions. It is a probabilistic classifier, which means it predicts on the basis of the probability of an object. Some popular examples of Naïve Bayes Algorithm are spam filtration, Sentimental analysis, and classifying articles.

The Naïve Bayes algorithm is comprised of two words Naïve and Bayes, which can be described as:

Naïve: It is called Naïve because it assumes that the occurrence of a certain feature is independent of the occurrence of other features. Such as if the fruit is identified on the bases of color, shape, and taste, then red, spherical, and sweet fruit is recognized as an apple. Hence each feature individually contributes to identify that it is an apple without depending on each other.

Bayes: It is called Bayes because it depends on the principle of Bayes' Theorem.

Bayes' Theorem:-

Bayes' theorem is also known as **Bayes' Rule** or **Bayes' law**, which is used to determine the probability of a hypothesis with prior knowledge. It depends on the conditional probability.

The formula for Bayes' theorem is given as:

$$P(A|B) = \frac{P(B|A)P(A)}{P(B)}$$

Where,

P (A|B) is Posterior probability: Probability of hypothesis A on the observed event B.

P (B|A) is Likelihood probability: Probability of the evidence given that the probability of a hypothesis is true.

P (A) is Prior Probability: Probability of hypothesis before observing the evidence.

P (B) is Marginal Probability: Probability of Evidence.

FUTURE SCOPE

In the upcoming future, the Project can cover more areas of predictions such as after 12th, after 10th what will be the career path of the candidate.

RESULT AND DISCUSSION

In the system, we have designed and developed a web-based application for a career guidance system which provides suitable recommendations for a candidate to choose an appropriate Job Role. The recommendation provided in the proposed system is more accurate than the existing career guidance system. We have used the Naive Bayes algorithm to classify the skill sets of the candidate and predict a suitable department with respect to the performance of the candidate. In this project, the career guidance system has been researched thoroughly and then designed and developed a web-based application with expected outputs.

REFERENCES

- [1] Tanya V Yadalam, Vaishnavi M Gowda, Vanditha Shiva Kumar, Disha Girish, Namratha M; "Career Recommendation Systems using Content based Filtering", IEEE, 2020.
- [2] E K Subramanian, Ramachandran, "Student Career Guidance System for Recommendation of Relevant Course Selection", IJRTE, 2019.
- [3] Bharat Patel, Varun Kakuste, Magdalini Eirinaki; "CaPaR: A Career Path Recommendation Framework", IEEE Third International Conference on Big Data Computing Service and Applications, 2017
- [4] Dr. D. Haritha and Lakshmi Prasanna, "Smart Career Guidance and Recommendation System", IJEDR, 2019.
- [5] Hong-Quan Do, Tuan-Hiep Le, and Byeongnam Yoon, "Dynamic Weighted Hybrid Recommender Systems", ICACT, 2020.
- [6] Maddala Lakshmi Bai, Rajendra Pamula, Praphul Kumar Jain, "Tourist Recommender System using Hybrid Filtering", ISCON, 2019.
- [7] E K Subramanian, Ramachandran, "Student Career Guidance System for Recommendation of Relevant Course Selection", International Journal of Recent Technology and Engineering (IJRTE), April 2019.
- [8] Shebha Shahab, "Next Level: A Course Recommender System based on Career Interests", San Jose State University Scholar Works, 2019.
- [9] Rimpal Unadkat, Mehul Barot, "Survey Paper on Fuzzy Logic Based Recommender System", IJARIE – ISSN, 2017.
- [10] Zameer Gulzar, A. Anny Leema, Gerard Deepak, "Personalized Course Recommender System Based on Hybrid Approach", ICSCC, 2017.
- [11] Priyanka, "A Survey Paper on Various Algorithms based Recommender System", IOSR – Journal of Computer Engineering (IOSR – JCE), May – June 2017.
- [12] Seema K Yadav, Sujit J Singh, Akshay M Bora, Shashankit N Thakur, "Educational Recommendation and Tracking System", International Journal of Scientific & Engineering Research, November 2016.
- [13] Paulo Alencar, Donald D Cowan, "The Use of Machine Learning Algorithms in Recommender Systems: A Systematic Review", Research Gate, November 2015.

[14] Bhumika Bhatt, Prof. Premal J Patel, Prof. Hetal Gaudani; “A Review Paper on Machine Learning Based Recommendation System”, IJEDR, 2014.

[15] Claudia Crisan, Oana Ghimbulut, Anisara Pavelea, “A Need Assessment on Students’ Career Guidance”, The 6th International Conference Edu World 2014 Education Facing Contemporary World Issues, 7th, 9th November 2014.

[16] Mukta Kohar and Chhavi Rana, “Survey Paper on Recommendation System” International Journal of Computer Science and Information Technologies, 2012.

