CAREER COUNSELING SYSTEM USING MACHINE LEARNING

MINOR PROJECT SYNOPSIS

BACHELOR OF TECHNOLOGY

INFORMATION TECHNOLOGY

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1.INTRODUCTION

When it comes to choosing a career, it's not just about what course you take; it's also about what you want to do later in life. Counseling is more about getting to know and understand yourself, as well as your abilities and talents. Not every student gets plenty of guidance from their parents, teachers, or other educational specialists. There have been numerous cases where a student chooses a course/stream and later regrets his or her decision.

Hence, a correct assessment of one’s skill set and their caliber that recommend the correct stream to settle on is very important. So, we picked this as our problem statement and began thinking through how we are able to help the students in addressing this question.

We have focused on this problem of students using machine learning. With the help of machine learning, we will help the student to decide which is the best career option and domain for them.The career is decided based on academic information filled by the student. This project will help the student to get directed towards a specific domain as per their skills sets.

Most of the engineering students do not get the proper guidance or are not very clear about what they would like to pursue in their life in terms of their careers. Our proposed system takes inputs from GUI, which will process it and gives two job fields. We will be using various ML models for classification and prediction. We want the student not to get confused between so many fields. This model makes it easy for the student by recommending two fields that are most suitable for them based on their input.

2.OBJECTIVES

The main objective is to help in choosing a proper course.This entire process needs to be a scientific process of guidance and counseling for the best development of individuals and growth of society. This would further help in the proper choice of careers as there are changing requirements in jobs,which make occupational selection more difficult than ever.

Young students in colleges and universities need to be informed so that they can measure and analyze themselves and develop their occupational goals.They need to be helped in making meaningful occupational choices.

To develop readiness for choices and changes to face the needed challenges.Guidance services are needed to develop in the students the ability to cope with their new problems.

3. **FEASIBILITY STUDY**

Intelligent Career Planning & Guidance Assistant is a computer program built with the help of experts where the details of the students and their aptitudes help finding the right course for their future. Choosing the right field after engineering is a very important life decision. Many Machine learning techniques have been applied to develop student performance prediction algorithms.

There are mainly two issues while developing this sort of model one is whether the student is willing to build his career based on his interests and compassions and whether the student has proper identification of improving his Skills by pursuing certification courses based on the interests of the students. So questionnaires are developed in this model that must classify the reflections of the student outcomes.
We are doing a comprehensive study of the choices including the current situation, opportunities, and possible options. This would involve surveys with specific questionnaires to gather real data which can be used for further prediction.

4 METHODOLOGY

For developing the system certain methodologies have been used. They are as follows:

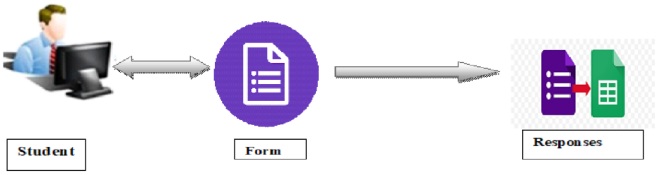

Fig 4.1 User Interface Design

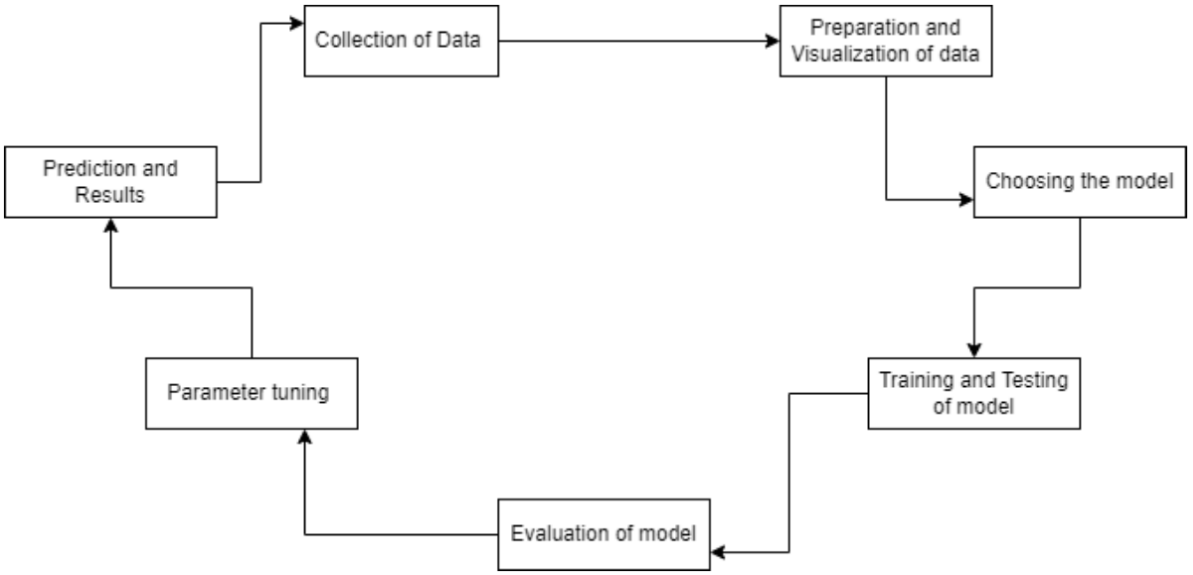

Fig 4.2 Basic Machine Learning Model

The basic methodology is as described -

1) **Registration and Login :** The students would be registered through an authorized mail id.The login credentials would be created and would be validated through every login attempt.

2) **Discover yourself**: This section would enable the students to take a few tests to discover their ability, interests, inclination, etc. This would be used as a dataset for suggesting the possible career options.

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

4)**Predicting the Skills**:By applying the K Nearest Neighbor algorithm on the data set , we predict the courses for a specific student.

5)**Recommend the respective 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.

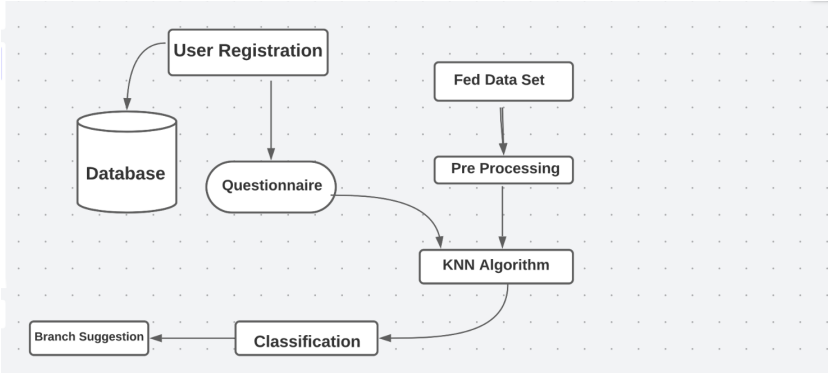

Fig 4.3 Combined Workflow

5. FACILITIES REQUIRED FOR PROPOSED WORK

A) Languages Used:

- Python: The entirety of the code written for this project as in Python. Being a full-edged programming language, Python is a great tool to implement algorithms for production use. There are several Python packages for basic data analysis and machine learning. Python is an interpreted high-level general-purpose programming language. Its design philosophy emphasizes code readability with its use of significant indentation. Its language constructs as well as its object-oriented approach aim to help programmers write clear, logical code for small and large-scale projects.

B) Technologies used:

We would be using the following technology stack for this project:

a) Software Requirements: We would be using the following technology stack for this project:

1. HTML
2. CSS
3. Javascript
4. Bootstrap
5. PHP
6. Python
7. MySQL Database

b) Hardware Requirements

1. Operating System
2. Processor
3. Memory
4. Internet connection

6. **REFERENCES**

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