

Career Guidance System

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Introduction :

While graduation signifies the end of college many students can be left wondering, 'what's next?' Many students face a difficult time choosing a career path in college, especially in fields like Engineering where there are vast domains to choose from. Thus it is very important for students to assess their capabilities and identify their interests while pursuing their studies so that they are clear about their dreams and the career path leading towards it. Thus, we have proposed an idea of an **ML-based “Career Guidance System”** which helps the students (esp. In their pre-final and final year) to decide the job role the candidate should undertake based on his/her performance and other evaluations.

Existing System :

Currently, engineering students mainly rely on seniors, mentors, professors, and parents for career guidance. Some may also seek guidance from counsellors.

Drawbacks of this method :

- Sometimes Counsellors have limited Knowledge to tackle the situation or give a solution to a problem.
- There might be uncertainties. It is not sure or guaranteed for the desired outcome.
- The outcome can be influenced by the counsellor's personal interests
- It is difficult to find qualified and trustworthy career counsellors and some people cannot afford costs for counselling.

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Our Solution :

Our proposed idea of the Career recommendation system takes into consideration the students' abilities in academics, technicality, hobbies, interests, psychometry, skills, and knowledge. Taking these inputs machine learning algorithms will be applied and suitable job roles will be suggested.

ML Algorithms used:

- Support Vector Machine(SVM)
- XG Boost
- Decision Tree

Timeline:

1st step:

- **Data collection:** Find an appropriate dataset with appropriate parameters like academic scores, specialization programs, analytic capabilities, personal details like hobbies, workshops, certifications, books interested, etc.
- **Data Pre-processing:** Make the acquired data set in an organized format. Cleaning the null values, invalid data values, and unwanted data.
- **OneHot Encoding:** Applying techniques for converting categorical values in the data into a numerical or ordinal format so that they can be provided to machine learning algorithms.
- Study the various algorithms required for implementing the project.

2nd Step:

- Apply the algorithms on the training dataset and make a model.
- Assess which algorithm gives the best and accurate results.

3rd Step:

- Test the system with our friends, Take valuable feedback, and try more advanced algorithms to improve the system more.
- Prepare a user-friendly interface for easy usage.

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References:

[1] Student Career Prediction Using Advanced Machine Learning Techniques - K. Sripath Roy 1, K.Roopkanth 2*, V.Uday Teja 3, V.Bhavana4, J.Priyanka 5, Department of Electronics and Communication Engineering, Koneru Lakshmaiah Education Foundation, Vaddeswaram, Guntur, Andhra Pradesh.