University Admit Eligibility Predictor

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Introduction

Students are often worried about their chances of admission to University. The aim of this project is to help students in shortlisting universities with their profiles. The predicted output gives them a fair idea about their admission chances in a particular university. This analysis should also help students who are currently preparing or will be preparing to get a better idea.

Given certain metrics of a student, our task is to predict the probability of the student getting accepted into graduate programs. Statistically, we have seen many students pursue their education away from their native countries. Generally, as the students don't have much of an idea about the procedures, requirements, and details of the universities, they seek help from education consultancy firms to help them successfully secure admission to the universities which are best suitable for their profiles. For this, they have to invest huge amounts of money in consultancy fees. The aim of this research is to develop a system using Applied Data Science.

University prediction would be the easiest mode to predict the university/college person is applicable for as well as it would be unbiased and totally transparent. Individually would no more need to depend upon the consultancies who may be slightly deviated from the list of colleges/universities that may be having contracts with them. Moreover, applying to only colleges/universities where the student has a genuine chance would reduce the application process. Additionally, living expense of the area where colleges/university is located would also be provided on the website

Objective

The main objective of this project is to help the students save the time and money they have to spend at the education consultancy firms. And also it will help them to limit their number of applications to a small number by proving to them the suggestion of the universities where they have the best chance of securing admission thus saving more money on the application fees.

Many students in today's educational environment feel the need to pursue higher education after completing an engineering or graduate certification program. Advanced education is defined as the requirement for some groups to complete MTech through GATE or through any other educational institute entrance examination, MBA through CAT or through any other individual educational institute entrance examination, and Masters at foreign colleges. In educational institutions, the topic of understudy confirmation is crucial. In order to predict the possibility of a student being admitted to a Master's program, we are tackling AI models. Students will benefit from knowing in advance whether they will have the chance to be recognized.

Linear relapse, Decision tree regressor, and Random Forest regressor are the machine learning models. Studies demonstrate that the linear regression model works better than other models.

1. High Priority:
a. The system shall provide the user access to the AI predictor, wherein the user will be able to fill in a form with their academic transcripts data (GRE score, TOEFL Score, CGPA, SOP Score, LOR Score, Research experience), choose the tier of university they wish to apply to (1-5(top level)) and then get a prediction of their chances of admissions to that level university based on the mapping between their requirements and the student's results.
b. The system shall provide the administrator access to all the records in the database on a "read-only" basis.

2. Medium Priority:
a. The system shall provide all users with answers to the most common FAQs like – "Distribution of University Tiers", "University Admissions Criteria"
b. The system shall allow the user's details to be stored for the next time they return to the website. If the user chooses to take a new evaluation, the most recent inputs as well as predictions shall replace any previous data.

3. Low Priority:
The system shall provide users an analysis of how the various factors mentioned in the form affect their chances of admissions as well as what is the general trend of applications to the various tiers of universities.

Literature Survey

[1]. In a remarkable study, Acharya et al. compared the likelihood of a concession based on the best model with the lowest MSE, which was a multilinear relapse, to four different relapse calculations: linear regression, support vector regression, decision trees, and random forest.

Advantage:
1. Benefits: Generally more accurate than other options,
2. Train more quickly, especially with bigger datasets.

Disadvantage:
1. Overfitting-prone: this problem may be resolved by using L1 and L2 regularisation penalties. You may also experiment with low learning rates;

[2]. In predicting the possibility of a compromise, Chakrabarty et al. considered both linear regression and gradient boosting regression; they point out that gradient boosting regression produced better results.

Advantage:
1. The vast majority of them support handling categorical characteristics,
2. Some of them provide native handling for missing values.

Disadvantage:
1. Models, particularly those trained on CPUs, may be computationally costly and time-consuming;

[3]. A model that analyses the alumni affirmation measure used by American institutions and using AI's methodologies was developed by Gupta et al. The goal of this inquiry was to assist students in choosing the appropriate educational institution for their application. This study used Naive Bayes, SVM (Linear Kernel), AdaBoost, and Logistic classifiers.

Advantage:
1. Easy to Implement Evaluation of the conditional probability is simple.
2. It might produce excellent results if the conditional Independence assumption is true.

Disadvantage:

1. It is not always true that the conditional Independence Assumption is true. The feature often exhibits some sort of dependence.

[4]. A remarkable essay by Waters and Miikkulainen improved the presentation of applications for inspection using quantifiable and assisted in putting graduation affirmation applications according to the degree of recognition.

Advantage:

1. the simplest way to determine whether a person is eligible for a university or college as well as being completely objective and transparent:
2. Individuals would no longer need to rely on consultancies that may have contracts with schools and universities that are somewhat off the list.

Disadvantage:
1. Not only does the program simplify the arduous process of reading through thousands of applications,

[5]. S. Sujay used linear regression to calculate the probability of admitting graduate students to expert projects. Nevertheless, no additional models were run.

Advantage:
1. Implementing and understanding the results of linear regression are both straightforward.
2. This method is the best to employ when you know the relationship between the independent and dependent variable has a linear relationship since it has less complexity when compared to other algorithms.

Disadvantage:
1. Contrarily, linear regression presumes that the relationship between the dependent and independent variables is linear. This implies that it considers their relationship to be linear. The independence of the qualities is assumed.

Reference

1.   "A Comparison of Regression Models for Prediction of Graduate Admissions," M. S. Acharya, A. Armaan, and A. S. Antony, Kaggle, 2018.

2.   "Systematic ensemble model selection method for educational data mining," Knowledge-Based Syst., vol. 200, p. 105992, July 2020; M. N. Injadat, A. Moubayed, A. B. Nassif, and A. Shami.

3.   TH Bruggink and V Gambhir, 1996. A case study of statistical models used in college admissions.

4.   The SAT Journal of Econometrics and J. Rothstein College performance forecasts (2004)