IDEATION PHASE

LITERATUE SURVEY

Date	8 September 2022
Team ID	PNT2022TMID02758
Project Name	University Admit Eligibility Predictor

Literature Survey:

The main purpose of this study is to identify the problems and drawbacks of current system. Apart from that this study is carried out to analyze the problems that occurred from the current system to come out with the solutions to overcome the regarding drawbacks. Then, it is important to study and analyze the management process and activities in order to identify the requirements of the future system. Next is to conclude the future system and to classify the main modules for the system.

(Bibodi et al. (n.d.)) used multiple machine learning models to create a system that would help the students to shortlist the universities suitable for them also a second model was created to help the colleges to decide on enrolment of the student. Nave Bayes algorithm was used to predict the likelihood of success of an application, and multiple classification algorithms like Decision Tree, Random Forest, Nave Bayes and SVM were compared and evaluated based on their accuracy to select the best candidates for the college. Limitation of this research as that it did only relied on the GRE, TOEFL and Undergraduate Score of the student and missed on taking into consideration other important factors like SOP and LOR documents quality, past work experience, technical papers of the students etc.

Bayesian Networks were used by (Thi et al. (2007)) to create a decision support system for evaluating the application submitted by international students in the university. This model was designed to predict the performance of the aspiring students by comparing them with the performance of students currently studying in the university and had similar profile during their application. In this way based on the current students profile the model predicted whether the aspiring student should be granted admission to the university. Since the comparisons were made only with the students who were already admitted in the university and the data of the students who were denied admission were not included in the research this model proved to be less efficient due to the problem of class imbalance

In research conducted by (Jamison (2017)) the yield of college admission was predicted using machine learning techniques. Yield rate can be defined as the rate at which the students who have been granted admission by the university actually enrol for the course. Multiple machine learning algorithms like Random Forest, Logistic Regression and SVM were used to create the model; the models were compared based on their performance and accuracy, Random Forest outperformed the other models with 86% accuracy and was thus used to create the system. The factors that proved to be significant in predicting successful application were also highlighted.

GRADE system was developed by (Waters and Miikkulainen (2013)) to support the admission process for the graduate students in the University of Texas Austin Department of Computer Science. The main objective of the project was to develop a system that can help the admission committee of the university to take better and faster decisions. Logistic regression and SVM were used to create the model, both models performed equally well and the final system was developed using Logistic regression due to its simplicity. The time required by the admission committee to review the applications was reduced by 74% but human intervention was required to make the final decision on status if the application.(Nandeshwar et al. (2014)) created a similar model to predict the enrolment of the student in the university based on the factors like SAT score, GPA score, residency race etc. The Model was created using the Multiple Logistic regression algorithm, it was able to achieve accuracy rate of 67% only.

Existing Systems:

- **CollegeAI**

  This tool asks the university name for which eligibility needs to be predicted. It queries High school GPA, SAT and ACT scores and then it gives the result in the graphical form which makes interpretation dull. The student leaves without proper understanding of his / her eligibility for his desired university.

- **CampusReel**

  This tool looks cool when UI is taken into account but does not convey the results within a short time. It does not provide further guidance for student's seeking advice for next steps.