

A UNIVERSITY ADMISSION PREDICTION SYSTEM USING STACKED ENSEMBLE LEARNING

S. Sridhar, S. Mootha and S. Kolagati, "A University Admission Prediction System using Stacked Ensemble Learning," 2020 Advanced Computing and Communication Technologies for High Performance Applications (ACCTHPA), 2020, pp. 162-167, doi:

10.1109/ACCTHPA49271.2020.9213205. Abstract: For an aspiring graduate student, shortlisting the universities to apply to is a difficult problem. Since an application is extremely dynamic, students often tend to wonder if their profile matches the requirement of a certain university. Moreover, the cost of applying to a university is extremely high making it critical that students shortlist universities based on their profile. A university admission prediction system is quite useful for students to determine their chances of acceptance to a specific university. The system could make use of data related to previous applicants to various universities and their admit or reject status. Earlier models of such prediction systems suffer from several drawbacks such as not considering important parameters like GRE (Graduate Record Exam) scores or research experience. Further, the accuracy reported by earlier models is also not sufficiently high. In this paper, a stacked ensemble model that predicts the chances of admit of a student to a particular university has been proposed. The proposed model takes into consideration various factors related to the student including their research experience, industry experience etc. Further, the system proposed has been evaluated against various other machine learning algorithms including other deep learning methods. It is observed that the proposed model easily outperforms all other models and provides a very high accuracy.

Observation: An effective method has been proposed to predict the chances of a student being admitted to a specific university. In addition, we have compared the performance of various machine learning algorithms to the proposed method in predicting admits. It is observed that the proposed method provides the best performance with an accuracy of 91%

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APPLYING A HYBRID MODEL OF NEURAL NETWORK AND DECISION TREE CLASSIFIER FOR PREDICTING UNIVERSITY ADMISSION

S. Fong, Y. -W. Si and R. P. Biuk-Aghai, "Applying a hybrid model of neural network and decision tree classifier for predicting university admission," 2009 7th International Conference on Information, Communications and Signal Processing (ICICS), 2009, pp. 1-5, doi:

10.1109/ICICS.2009.5397665. Abstract: Predicting university admission is a complex decision making process that is more than merely relying on test scores. It is known by researchers that students' backgrounds and other factors correlate to the performance of their tertiary education. This paper proposes a hybrid model of neural network and decision tree classifier that predicts the likelihood of which university a student may enter, by analysing his academic merits, background and the university admission criteria from that of historical records. Our prototype system was tested with live data from sources of Macau secondary school students. In addition to the high prediction accuracy rate, flexibility is an advantage as the system can predict suitable universities that match the students' profiles and the suitable channels through which the students are advised to enter. Our model can be generalized with other attributes and perform faster when compared to using a neural network alone.

Observation : A hybrid model upon which the Recommender System of Admission to University (RSAU) prototype is built. It analyses secondary school pupils' data from numerous sources to

forecast their prospects of admission to institutions. It assists secondary school administrators, instructors, and senior secondary students in making recommendations to universities.

URL: <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=5397665&isnumber=5397465>

ENGINEERING & TECHNOLOGY ADMISSION ANALYSIS AND PREDICTION.

Bhoite, Sachin & More, Ajit. (2020). ENGINEERING & TECHNOLOGY ADMISSION ANALYSIS AND PREDICTION. GEDRAG & ORGANISATIE REVIEW. 33. 10.37896/GOR33.02/181. A Great career without a Great Education is just a DREAM. While we talk about career— a person's degree, specialization, College/University and the knowledge that he possesses – are the key factors. In India the educational pattern is 10+2+3+2 or 10+2+4+2 or 10+2+5.5 & career related decisions are discussed after 10th standard and mostly concluded after 12th. As soon as a student completes his/her Higher Secondary Schooling, the first goal of any student is to get into an appropriate College/University for appropriate course/program so that he can get a better education, guidance & placement for his future. To build predictive model we used Logistic Regression, K Nearest Neighbours', Decision Tree Classifier, Random Forest Classifier, Naive Bayes & Support Vector Machine classifiers then compare the results of cross-validation with & without feature engineering and also compare the probabilities of getting admission to a college. The performance of various classifiers is described in this paper. It is found that Random Forest & Decision tree classifiers give better accuracy.

Observation: Compare cross-validation approaches for accuracy as performance major before and after feature engineering and eventually concluded the prediction of College for career after 12th in the engineering and technology. 'Merit Marks,' 'Candidate Type,' 'Category,' 'Home University,' 'PH Type,' 'defence Type,' 'HSC Eligibility,' and 'BRANCH' are the eight input features used for this study out of a total of twenty. According to Univariate Selection, Recursive Characteristics Importance, and Lasso feature selection techniques, and massive Exploratory Data Analysis, these features are highly essential by verifying and visualising correlation between each input feature and target feature. The goal of this study is categorical in character. As a result, they employed the Logistic Regression, K-NN, Decision Tree classifier, Random Forest, Nave Bays, and Support Vector Machine 6supervised machine learning algorithms.

URL: https://www.researchgate.net/publication/341740217_ENGINEERING_TECHNOLOGY_ADMISSION_ANALYSIS_AND_PREDICTION

A COMPARATIVE STUDY OF DIFFERENT MACHINE LEARNING TECHNIQUES TO PREDICT THE RESULT OF AN INDIVIDUAL STUDENT USING PREVIOUS PERFORMANCES

Ahammad, Khalil & Chakraborty, Partha & Akter, Evana & Fomey, Umme & Rahman, Saifur. (2021). A Comparative Study of Different Machine Learning Techniques to Predict the Result of an Individual Student Using Previous Performances. International Journal of Computer Science and Information Security,. 19. 5-10. 10.5281/zenodo.4533374. Machine learning is a sub-field of computer science refers to a system's ability to automatically learn from experience and predict new things using the learned knowledge. Different machine learning techniques can be used to predict the result of the students in examination using previous data. Machine learning models can recognize vulnerable students who are at risk and take early action to prevent them from failure. Here, a model was developed based on the academic performance of the students and their result in the SSC exam. This

paper also shows a comparative study of different machine learning techniques for predicting student results. Five different machine learning techniques were used to demonstrate the proposed work. They are Naive Bayes, K-nearest Neighbours, Support Vector Machine, XG-boost, Multi-layer Perception. Data were pre-processed before fitting into these classifiers. Among the five classifiers, MLP achieved the highest accuracy of 86.25%. Other classifiers also achieved a satisfactory result as all of them were above 80% accuracy. The results showed the effectiveness of machine learning techniques to predict the performance of the students.

Observation: The prediction of student success becomes more difficult since the elements influencing student achievement do not always remain restricted to scores in prior regular exams. The proposed models may be used to identify vulnerable students at risk and take early action to prevent them from failing, which can help us take the required measures to improve the quality of education at the institution. With a relatively short dataset, all of the classifiers' accuracy was greater than 80%, with MLP achieving the greatest prediction accuracy of 86%.

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https://www.researchgate.net/publication/349028267_A_Comparative_Study_of_Different_Machine_Learning_Techniques_to_Predict_the_Result_of_an_Individual_Student_Using_Previous_Performances