IBM Team 7
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Domain Name: Education
Use case Name: University Admit Eligibility Predictor

Paper 1
Authors: Abdul Hamid M Ragab; Abdul Fatah S. Mashat; Ahmed M Khedra

Year : 2012

Title: HRSPCA : Hybrid Recommender System for Predicting College Admission

Methodology: This paper proposes a new college admission prediction technique based on using two cascaded knowledge rules for achieving student's college admission with high performance fairly and accurately. The system analyzes student academic merits, background, student records, and the college admission criteria. Then, it predicts the likelihood of university college that a student may enter.

Advantage: The system provides recommendations about which university colleges a student should be admitted to , taking into consideration not only student's scores but also other university qualified criteria into account. The HRSPCA system was validated using real students data.System experiments showed that the HRSPCA system performs substantially high performance due to allocating admission tasks between two cascading recommenders

Disadvantage: Out of 66 thousand applicants , Only 16 thousand were able to match the standard university or college standards.

Paper 2
Authors: Shen Zihao, Wang Hui

Year : 2010

Title: Research on College Party's Admission Management System Based on Workflow

Methodology: This paper describes the workflow management system and its functional characteristics, gives the formal definition of workflow model. Combined with the present situation of college Party's admission, it discusses the business process of Party's admission, and builds a Petri net-based workflow model. Based on Web applications as background; it presents solutions for college Party's admission management system, which satisfies the need of college Party's admission. The schema with good usability and versatility has a certain application value.

Advantage: The change of business process of Party's admission can easily be realized by the control of workflow nodes, which solved the problem of a large task quantity, managing complex and changing flexibility in college Party's admission, and realized the efficiency promotion for management.

Disadvantage: It can not handle the complex process logic, and lacks flexibility. It is web oriented and hence not accessible without the Internet. College Parties are now-a-days becoming extinct

Paper 3

Authors: Jayashree Katti, Jony Agarwal, Swapnil Bharata, Swati Shinde, Saral Mane, Vinod Biradar

Year : 2022

Title: University Admission Prediction using Google Vertex AI

Methodology: For a pursuing graduate student, shortlisting the colleges could be an intense issue. College undergraduates frequently have an inclination to ponder over the chance that their profile suits the college requirements. Computer programs are exceptionally well trained and faster than humans in making decisions. Moreover, the cost of admission in a college is a lot, making it very crucial for a student that their profile gets shortlisted for a university admission.

Advantage: A University prediction machine learning algorithm is very advantageous for college undergraduates to choose their dream university which also matches their resume. The proposed method considers diverse variables related to the student and his score in various tests.

Disadvantage: The dataset includes LOR , GRE score , CGPA , TOFEL score , University Rating , SOP , etc. Based on all these criterias, the admission to a particular university of an undergraduate will be predicted.The Students may not be able to pay the Exam Fees of all the Above Exams.

Paper 4

Authors: Zhenru Wang , Yijie Shi

Year : 2016

Title: Prediction of the admission lines of college entrance examination based on machine learning

Methodology: Accurate prediction of college entrance examination(CEE) results is very important for the candidates to fill in the application and the relevant analysis of the CEE. At present, the prediction of CEE score is based on data statistics, probability model and some weighted combination models. In this paper, machine learning methods are used to carry out the admission lines of research and prediction. Specifically, in this paper the Adaboost algorithm is

used to study and forecast, which belongs to ensemble learning. Finally, the result of this model is given, which is better than the current prediction.

Advantage: In this paper, machine learning methods are used to carry out the admission lines of research and prediction. Specifically, in this paper the Adaboost algorithm is used to study and forecast, which belongs to ensemble learning. Finally, the result of this model is given, which is better than the current prediction.

Disadvantage: Of course, the establishment of the model is not very perfect because of the in-exhaustive data. And there are still a lot of things to be improved. And in the aspect of feature selection, we only forecast the college entrance examination of Sichuan province. If we get more data in the future, we can also do university admission line forecasts. It is also a very significant work.

Paper 5

Authors: Abdul Majeed Inamdar, Tanmay Mhatre, Pravin Nadar, Supriya Joshi

Year : 2022

Title: Personalized College Recommender and Cutoff Predictor for Direct Second Year Engineering

Methodology: The engineering admission process is hectic and more than that is to find the college according to student preference i.e stream, location, university and seat type, etc. During the admission process the students always need to check the previous years cutoff of each college by visiting numerous websites & pdf lists which certainly consumes a lot of time. In our web application we will provide cutoff prediction of each college by the data-analysis of previous years cutoff, recommendation system for colleges listing according to student preferences, furthermore providing detailed comparison between institutions of their choice. The application is developed to bestow a personalized system so as to reduce time and ease the student's college selection process.

Advantage: It is very clear on the Goal of the Project and is very productive in a large set available for them.

Disadvantage: It doesn't work well for smaller sets while training. Such larger Sets are not available on the Web.

Paper 6

Authors: Haseeba Fathiya, Lipsa Sadath

Year : 2021

Title: University Admissions Predictor Using Logistic Regression

Methodology: Students applying for admissions to universities find it difficult to understand whether they have good chances of getting admission in a university or not. Keeping this in focus, we have used logistic regression techniques that have gained attention in the software engineering field for its ability to be used for predictions. This is a novel work on a university admissions predictor using which students can evaluate their competitiveness for getting admission at a university. This is developed by collecting real student data. The data is stored in a form of usable training data for the logistic regression classifier developed to make admissions predictions. We have collected the data from the Internet using a Selenium web scraper. The paper intensely discusses the methods, implementation and challenges faced in the process.

Advantage: The web scraper saves a lot of time and reduces labor costs, and the admissions predictor can be a useful tool to students trying to narrow down their university choices

Disadvantage: Many new features can be incorporated to improve the application. The model selected for each university can be tailored to produce the best results for the data available. Experimentation can also be done using other classification algorithms which could improve the accuracy. Other features can be included along with test scores and GPA to produce more accurate results.

S.No	Author	Title of the Paper	Methodology	Pros (Advantage)	Cons (Disadvantage)
1.	Abdul Hamid M Ragab; Abdul Fatah S. Mashat; Ahmed M Khedra (2012) **(IEEE paper 1)**	HRSPCA : Hybrid Recommender System for Predicting College Admission	This paper proposes a new college admission prediction technique based on using two cascaded knowledge rules for achieving student's college admission with high performance fairly and accurately. The system analyzes student academic merits, background, student records,	The system provides recommendations about which university colleges a student should be admitted to , taking into consideration not only student's scores but also other university qualified criteria into account. The HRSPCA system was validated using real students data.System experiments showed that the HRSPCA system	Out of 66 thousand applicants , Only 16 thousand were able to match the standard university or college standards.

			and the college admission criteria. Then, it predicts the likelihood of university college that a student may enter.	performs substantially high performance due to allocating admission tasks between two cascading recommenders	
2.	Shen Zihao, Wang Hui (2010) **(IEEE paper 2)**	Research on College Party's Admission Management System Based on Workflow	This paper describes the workflow management system and its functional characteristics, and gives the formal definition of workflow model. Combined with the present situation of college Party's admission, it discusses the business process of Party's admission, and builds a Petri net-based workflow model. Based on Web applications as background; it presents solutions for college Party's admission management system, which satisfies the need of college	The change of business process of Party's admission can easily be realized by the control of workflow nodes, which solved the problem of a large task quantity, managing complex and changing flexibility in college Party's admission, and realized the efficiency promotion for management.	It can not handle the complex process logic, and lacks flexibility. It is web oriented and hence not accessible without the Internet. College Parties are now-a-days becoming extinct

			Party's admission. The schema with good usability and versatility has a certain application value.		
3.	Jayashree Katti, Jony Agarwal, Swapnil Bharata, Swati Shinde, Saral Mane, Vinod Biradar (2022) **(IEEE paper 3)**	University Admission Prediction using Google Vertex AI	For a pursuing graduate student, shortlisting the colleges could be an intense issue. College undergraduates frequently have an inclination to ponder over the chance that their profile suits the college requirements. Computer programs are exceptionally well trained and faster than humans in making decisions. Moreover, the cost of admission in a college is a lot, making it very crucial for a student that their profile gets shortlisted for a university admission.	A University prediction machine learning algorithm is very advantageous for college undergraduates to choose their dream university which also matches their resume. The proposed method considers diverse variables related to the student and his score in various tests.	The dataset includes LOR , GRE score , CGPA , TOFEL score , University Rating , SOP , etc. Based on all these criterias, the admission to a particular university of an undergraduate will be predicted.The Students may not be able to pay the Exam Fees of all the Above Exams.

4.	Zhenru Wang , Yijie Shi (2016) **(IEEE Paper 4)**	Prediction of the admission lines of college entrance examination based on machine learning	Accurate prediction of college entrance examination(CEE) results is very important for the candidates to fill in the application and the relevant analysis of the CEE. At present, the prediction of CEE score is based on data statistics, probability model and some weighted combination models. In this paper, machine learning methods are used to carry out the admission lines of research and prediction. Specifically, in this paper the Adaboost algorithm is used to study and forecast, which belongs to ensemble learning. Finally, the result of this model is given, which is better than the current prediction.	In this paper, machine learning methods are used to carry out the admission lines of research and prediction. Specifically, in this paper the Adaboost algorithm is used to study and forecast, which belongs to ensemble learning. Finally, the result of this model is given, which is better than the current prediction.	Of course, the establishment of the model is not very perfect because of the in-exhaustive data. And there are still a lot of things to be improved. And in the aspect of feature selection, we only forecast the college entrance examination of Sichuan province. If we get more data in the future, we can also do university admission line forecasts. It is also a very significant work.

5.	Abdul Majeed Inamdar, Tanmay Mhatre, Pravin Nadar, Supriya Joshi (2022) **(IEEE Paper 5)**	Personalized College Recommender and Cutoff Predictor for Direct Second Year Engineering	The engineering admission process is hectic and more than that is to find the college according to student preference i.e stream, location, university and seat type, etc. During the admission process the students always need to check the previous years cutoff of each college by visiting numerous websites & pdf lists which certainly consumes a lot of time. In our web application we will provide cutoff prediction of each college by the data-analysis of previous years cutoff, recommendatio n system for colleges listing according to student preferences, furthermore providing detailed	It is very clear on the Goal of the Project and is very productive in a large set available for them.	It doesn't work well for smaller sets while training. Such larger Sets are not available on the Web.

			comparison between institutions of their choice. The application is developed to bestow a personalized system so as to reduce time and ease the student's college selection process.		
6.	Haseeba Fathiya, Lipsa Sadath (2021) **(IEEE Paper 6)**	University Admissions Predictor Using Logistic Regression	Students applying for admissions to universities find it difficult to understand whether they have good chances of getting admission in a university or not. Keeping this in focus, we have used logistic regression techniques that have gained attention in the software engineering field for its ability to be used for predictions. This is a novel work on a university admissions	The web scraper saves a lot of time and reduces labor costs, and the admissions predictor can be a useful tool to students trying to narrow down their university choices	Many new features can be incorporated to improve the application. The model selected for each university can be tailored to produce the best results for the data available. Experimentation can also be done using other classification algorithms which could improve the accuracy. Other features can be included along with test scores and GPA to produce more accurate results.

			predictor using which students can evaluate their competitiveness for getting admission at a university. This is developed by collecting real student data. The data is stored in a form of usable training data for the logistic regression classifier developed to make admissions predictions. We have collected the data from the Internet using a Selenium web scraper. The paper intensely discusses the methods, implementation and challenges faced in the process.		