

# Machine Learning Model for Prediction of Post Graduate Admissions

## Abstract:

Prospective graduate students always face a dilemma deciding universities of their choice while applying to master's programs. While there are a good number of predictors and consultancies that guide a student, they aren't always reliable since decision is made on the basis of select past admissions. In this project, we present a Machine Learning based method where we use algorithm, SVM (Support Vector Machine), given the profile of the student to predict colleges based on their profile. Results then indicate if the university of choice is can be accepted or rejected. Using this method user can enter various factors as input like GRE Score, GRE Score Quant, GRE Score verbal, under-graduation score, Work experience, Ranking, TOFEL score, total technical papers published. Based on these features machine learning model can be selected and predictions of which college is possible for applying for post-graduation is calculated and displayed to user.

## Keywords:

Machine Learning, Support Vector Machine, GRE Score, TOFEL score, Work Experience, GRE score Quant, GRE score verbal.

## Introduction:

The Graduate Program is an exhaustive task that requires thorough preparations, both in terms of building a noteworthy profile and choosing universities that offer relevant programs. A majority of students applying to master's programs face difficulty in shortlisting universities either because they are not aware of university rankings or would have been misinformed by seniors and fellow applicants. This often results in students missing out on admissions and leads to a complete wastage of resources. Here, we present a Machine Learning based approach where the data is trained on a range of values, from stellar profiles to mediocre ones. After training the data, new values are fed to the system to determine the outcome. A sample profile is tested against the model defined in order to understand the performance of each model.

We aim to bring students closer to their university of choice through a robust evaluation of their profiles. A good number of predictors and consultancy services fail in understanding the admission procedure and either suggest extremely ambitious schools or lower ranked ones. In this project, we have included parameters that are all relevant for graduate admissions. Barring a few exceptional cases in which a student may unexpectedly fetch an admit in a top school, most of the results are as expected and give a fair idea about the selection criteria. In further sections, we explore the model and try to understand the functioning.

## Literature Survey:

Students are often worried about their chances of admission in graduate school. The aim of this blog 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 for their higher education. Our motivation is, if we have an option to get the admissions very easy that can be more precious for us. Then we have planned to implement a Web-based online admissions.

In existing system students need to contact consultancy with scores from GRE and TOEFL and take suggestions from them and come to conclusion. In second process online search process was used by taking information from internet and university is selected. If a student selects a wrong path, then his entire career can go in ruin. The consultancy services fail to understand the admission procedure and either suggest extremely ambitious universities or low-ranked ones.

Machine Learning techniques are used in this application for prediction of prediction of college names and changes of prediction. The student enters his education details and his scores in GRE, TOEFL and submit the form. Then the application checks the data with trained machine learning models and prediction is performed. Then it displays the student's chances of admitting into a university based on his scores, education details and working experience, if any.

### **Existing System:**

In existing system students need to contact consultancy with scores from GRE and TOEFL and take suggestions from them and come to conclusion. In second process online search process was used by taking information from internet and university is selected. If a student selects a wrong path, then his entire career can go in ruin. The consultancy services fail to understand the admission procedure and either suggest extremely ambitious universities or low-ranked ones.

### **Problem In Existing System:**

- A good number of predictors and consultancy services fail in understanding the admission procedure and either suggest extremely ambitious schools or lower ranked ones.
- There are a number of predictors that evaluate a profile based on past admissions. May be the consultancies cannot predict the accurate ranking for any particular university, resulting in student's wrong decisions.
- Prediction of post-graduation admissions manually takes lots of time for a student, in coming to a conclusion.
- Many students even remain in dilemma that which university should be given high priority and which one the least.

### **Proposed System:**

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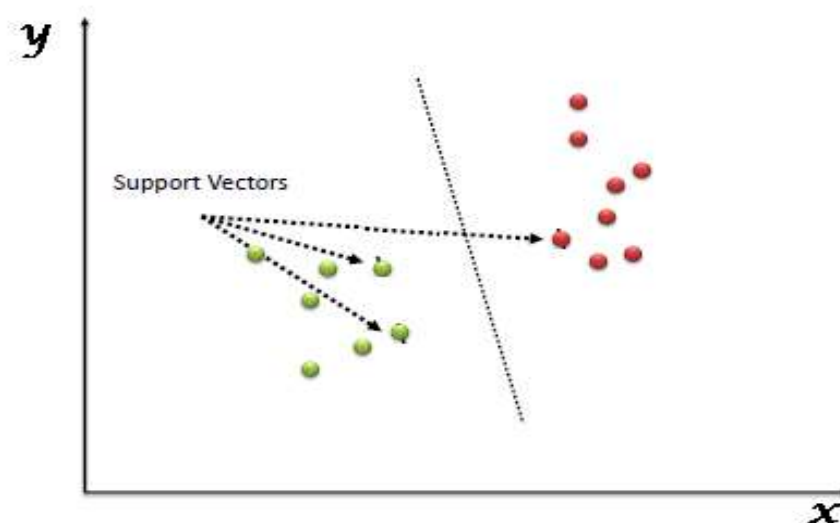
## Advantages of Proposed System:

- We use SVM (Select Vector Machine) model that give a definite value between 0 and 1 which is useful in understanding a student's profile.
- It also helps in analysing how important a particular parameter is for the admission and greatly affects the output value when one parameter is changed.
- Our dataset was created for the defined problem and is original in the true sense.

## System Design:

### Support Vector Machine:

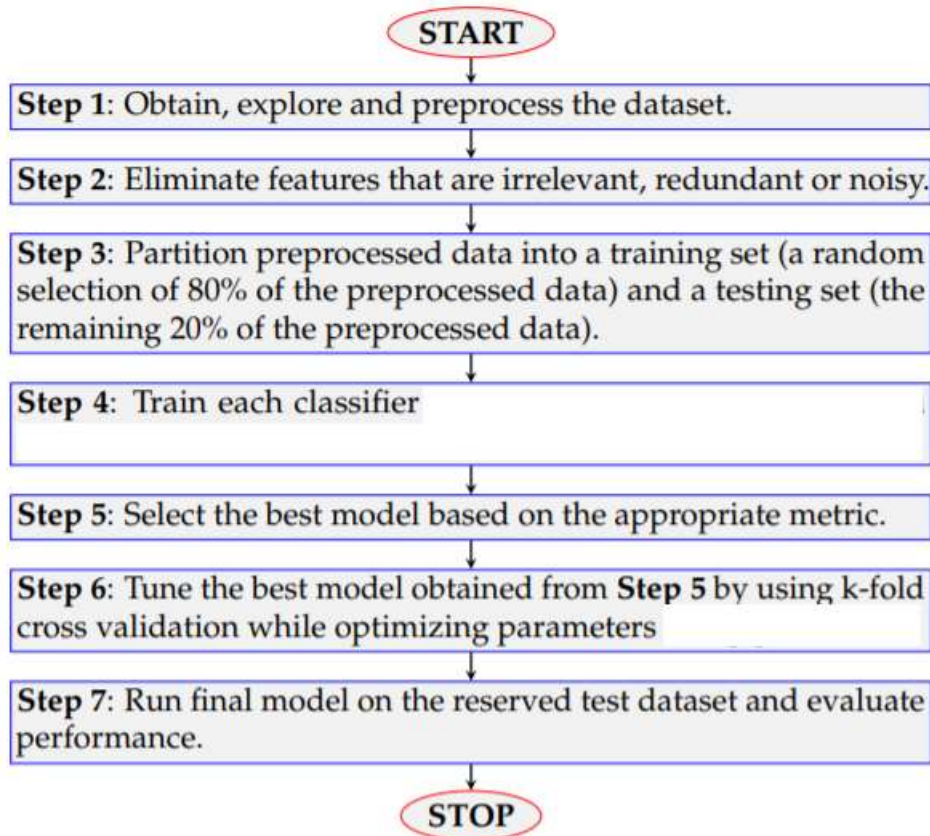
“Support Vector Machine” (SVM) is a supervised machine learning algorithm which can be used for both classification or regression challenges. However, it is mostly used in classification problems. In the SVM algorithm, we plot each data item as a point in n-dimensional space (where n is number of features you have) with the value of each feature being the value of a particular coordinate. Then, we perform classification by finding the hyper-plane that differentiates the two classes very well (look at the below snapshot).



**Figure 1: SVM algorithm**

Support Vectors are simply the co-ordinates of individual observation. The SVM classifier is a frontier which best segregates the two classes (hyper-plane/ line).

**Flow Chart:**



**Figure 2: flow chart**

Here first we collect the data sets and process the data and we remove if there are any impurities in the data sets. Next the data is normalized if needed like it can be converted to smaller volume of data. Next the data is converted to supporting format. And then it is stored in the databases. Next the required method is applied. Now we get the final results.

### Output Screens:

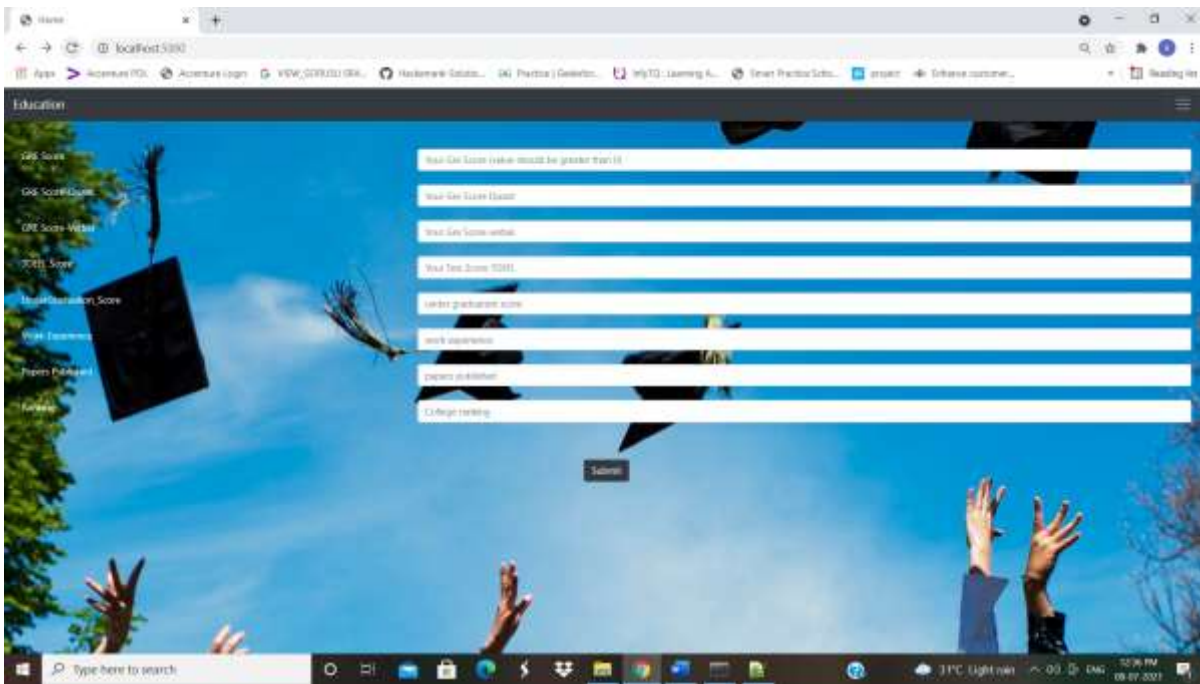


Figure 3: Home page

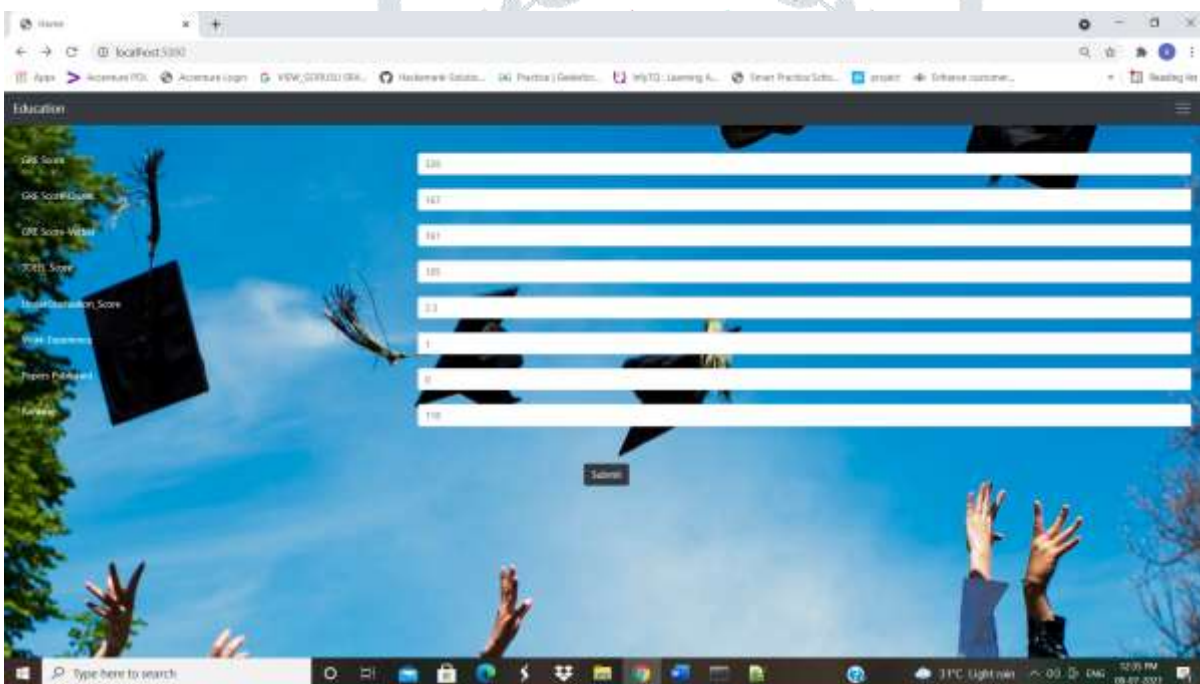


Figure 4: Student has entered his/her details.



Figure 5: Rejection Page



Figure 6: Acceptance Page

**Conclusion:**

Even though at educational field Machine Learning is still emerging, its effectiveness to analyse information is notorious. Through the analysis, predictions, and visualizations of information, for higher education’ directors obtain a greater understanding of the different variables involved when making a decision. Machine Learning supports this process providing various algorithms suitable to the different kinds of data and the different kinds of predictions required. We employ three supervised classification algorithms: SVM (Select Vector Machine) performs the best outcomes.

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