LITERATURE SURVEY

TITLE OF THE PAPER: Predicting Student University Admission using Logistic Regression.

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THEME OF THE PAPER:

- The primary purpose is to discuss the prediction of student admission to university based on
  numerous factors and using logistic regression. Many prospective students apply for Master's programs. The admission decision depends on criteria within the particular college or degree program.
  The independent variables in this study will be measured statistically to predict graduate school admission.
- Exploration and data analysis, if successful, would allow predictive models to allow better prioritization of the applicants screening process to Master's degree programme which in turn provides the admission to the right candidates.
- Student admission for the Master's degree program consists of different criteria/scores which is taken into consideration before admitting the student to the degree program. This process is elaborative and requires lot of thought processing and analysis by the selection committee before choosing the right applicants to the Master's degree program.
- The analysis might seem straight forward but caution has to be exercised to consider the scores like GRE, TOEFL, university rating, SOP, LOR and CGPA and any outliers should not impact the decision making process.
- This dataset is created for prediction of Graduate Admissions from an Indian perspective.
  UCLA data set will be examined for predictor variables which contribute to the college admission process. Data cleansing will be performed to eliminate irrelevant duplicates and outliers. The dataset consists of the below variables.
    - GRE Scores (out of 340)
    - TOEFL Scores (out of 120)
    - University Rating (out of 5)
    - Statement of Purpose and
    - Letter of Recommendation Strength (out of 5)
    - Undergraduate GPA (out of 10)
    - Research Experience (either 0 or 1)
    - Chance of Admit (ranging from 0 to 1).

- Logistic regression is used to model the relationship between a binary response variable and a set of predictor variables. It's used to estimate the probability of the response according to the various continuous and categorical predictors. The estimated probabilities can then be used to classify an unknown response into one of the two outcome levels, given a set of predictors.
- First will be looking for associations between your predictors, such as number of GRE, TOFEL, SOP, LOA and the binary response Chance of Admit, to see which variables should be considered for model inclusion. Then will use logistic regression to determine which students will have high probability of getting admission to Master's program.
- The model built is 87.5% accurate to predict admission status of a student. Logistic regression has been used to predict the model.

INFERENCE:

- The subject of this examination was to determine if the below variables contribute to the admission of student to Master's degree program.
    - GRE Score
    - TOEFL Score
    - University Rating
    - SOP
    - LOR
    - CGPA
- The results of this examination appear to indicate that it greatly contributes to the response variable 'Chance of Admit'. Higher the GRE, TOEFL score then higher the admit chances. The model predicts 87.5% accuracy and can be used for predicting the admit chances based on the above factors. This model will be helpful for the universities to predict the admission and ease their process of selection and timelines.

- As part of the hypothesis, the model proved that admission to Master's degree program is dependent on GRE, TOEFL and other scores.

- This model would likely be greatly improved by the gathering of additional data of students from different universities which has similar selection criteria to choose the candidates for Master's program.