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Predicting chance of graduate admissions from an Indian perspective

Thousands of undergraduate students in India apply to graduate admissions abroad every year. A single student's application requires many components such as a GRE score, TOEFL score, statement of purpose, letters of recommendation, CGPA, research experience, etc. Applying to a single university can cost hundreds of dollars in application fees, sending test scores, etc.

We will be using the Kaggle dataset owned by Mohan S Acharya, which includes the following parameters: GRE score (out of 320), TOEFL score (out of 120), university rating (out of 5), statement of purpose and letter of recommendation strength (out of 5), undergraduate GPA (out of 10), and research experience (either 0 or 1).

From this learning task, we will be able to help students shortlist universities with their profiles and save their valuable time and money. The predicted output, which is a chance of admit (either 0 or 1), can give them a fair idea about their chances of getting admitted to a certain university.

We will be using multiple linear models including linear and logistic regression. We will be using gradient descent or stochastic gradient descent as our learning algorithm. We will be normalising the features and then use Lasso and/or Ridge Regularization with tuning hyperparameters like K-fold validation or cross-validation. After that we will search for more advanced techniques and try to implement in our model if they make it better and more accurate. We will also try ensemble approaches like bagging. We will separate the data into testing set and training set using advanced techniques and evaluate our model based on the obtained testing set.

Each team member will research new and advanced techniques that can be used in the project and also if techniques prove to be useful, they will supply the code for it. We will then finalize the code and try to make the best model that is neither underfitting nor overfitting the training data.

Citation: **Mohan S Acharya, Asfia Armaan, Aneeta S Antony : A Comparison of Regression Models for Prediction of Graduate Admissions, IEEE International Conference on Computational Intelligence in Data Science 2019**