Accepted or Not

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Introduction

- 9.3 percent of the American adult have master's degree and 2 percent of the American adult have doctoral degree
- Predict if a student can be accepted by a graduate school (with enough information)
- Understand what are the aspects that the graduate school cares about during graduate admission
- Helpful for self prediction and could be helpful for school recommendation

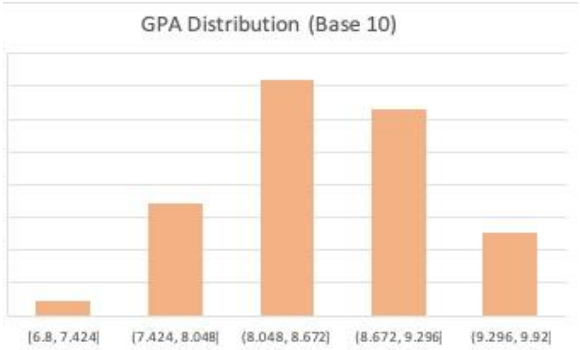
Dataset

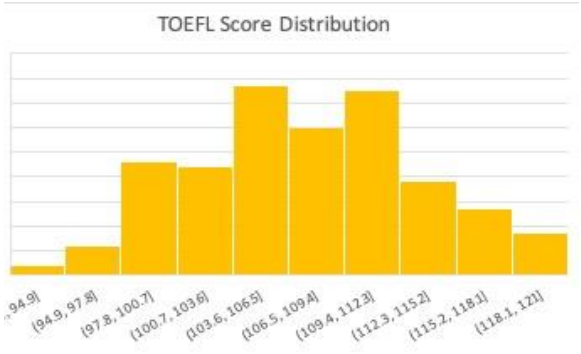
Graduate Admissions Dataset from Kaggle

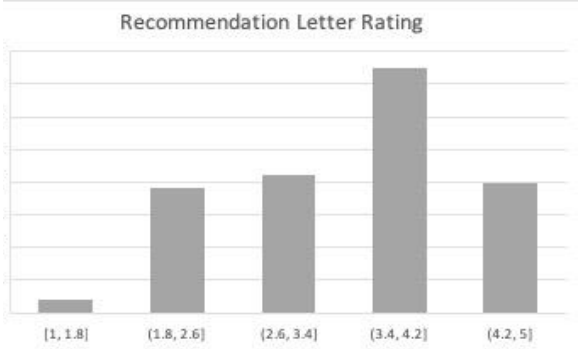
In the dataset:

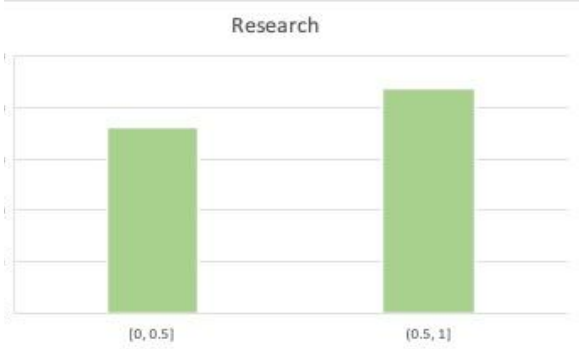
- GRE Scores (out of 340)
- TOEFL Scores (out of 120)
- Your Dream School Rating (out of 5)
- Statement of Purpose and Letter of Recommendation Strength (out of 5)
- Undergraduate GPA (out of 10)
- Research Experience (either 0 or 1)
- Chance of Admit (ranging from 0 to 1)

First Glance of the dataset









Method 1: Linear Regression

Most Significant Predictors

1.GPA

2. University Rate

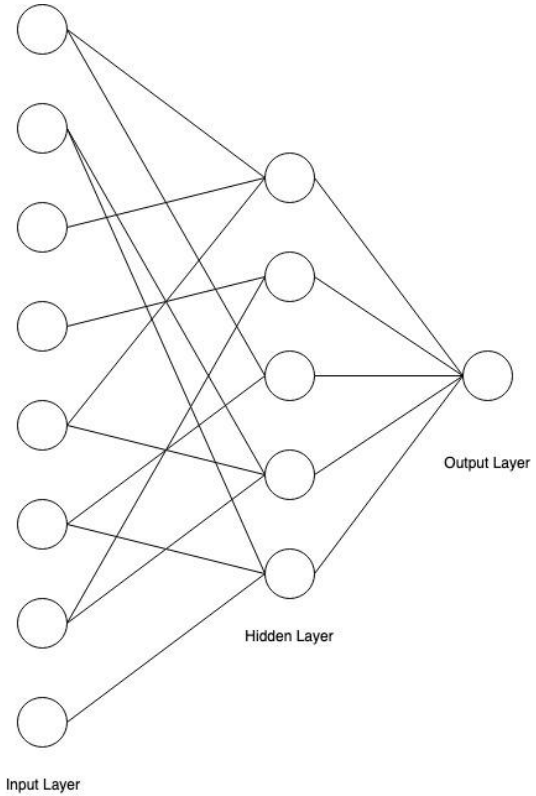
3. Recommendation Letter

	coef	std err	t	P>|t|	[0.025	0.975]
GRE	0.0096	0.067	0.144	0.886	-0.121	0.141
TOEFL	0.1655	0.068	2.450	0.015	0.033	0.298
Rate	-0.1510	0.041	-3.718	0.000	-0.231	-0.071
Statement	0.1003	0.048	2.074	0.039	0.005	0.195
Recommendation	0.1104	0.042	2.633	0.009	0.028	0.193
GPA	0.9602	0.076	12.651	0.000	0.811	1.110
Research Exp	0.0006	0.017	0.038	0.970	-0.033	0.034

Omnibus:	5.918	Durbin-Watson:	2.065
Prob(Omnibus):	0.052	Jarque-Bera (JB):	3.919
Skew:	0.101	Prob(JB):	0.141
Kurtosis:	2.496	Cond. No.	19.4

Method 2: Neural Network

- 3 layers NN.
- Initialized the weights' mean with 0.0 and the Standard deviation with 0.05.
- Used rectified linear unit (ReLU) as activation function in the input layer and hidden layer and sigmod in the output layer.
- Used Adam algorithm to optimize the model.



Comparison

LR Result:

r_square score: 0.828982562056165 9

mean square error: 0.00417339999753514 4

NN result:

r squared: 0.795990082765938 3

mean_squared_error: 0.00497852732632681 45

User Interface

http://127.0.0.1:5000/

Future Work

- Try some other method to get better result.
- Come up with the algorithm and build a school suggestion system.