# Comparison of 3 classification models

Comparison of Naïve Bayes, Linear Discriminant Analysis and Logistic Regression pulsar classifiers using AUC and accuracy scores

Dataset

- 17,898 records, out of which 1639 pulsars

- 9 neutron star characteristics

(mean, std, kurtosis, skewness of int profile and DM-SNR curve), class of neutron star

- 9.16% are of neutron stars in the dataset are pulsars

Proportion of target variable in dataset
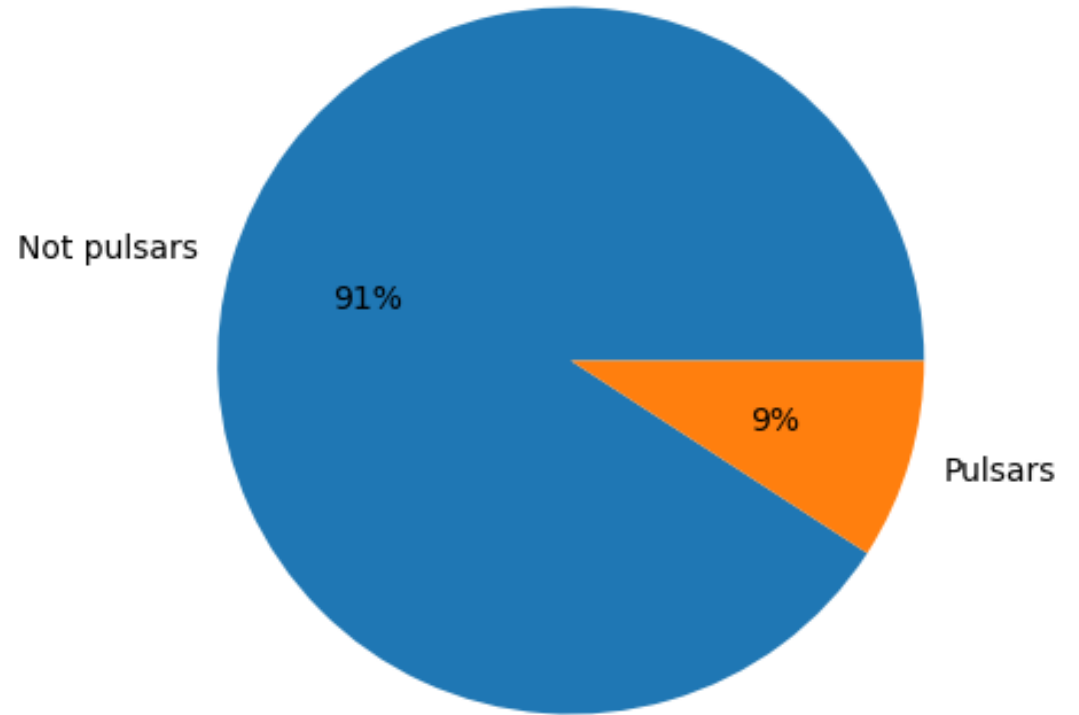
Classification Models

Naïve Bayes

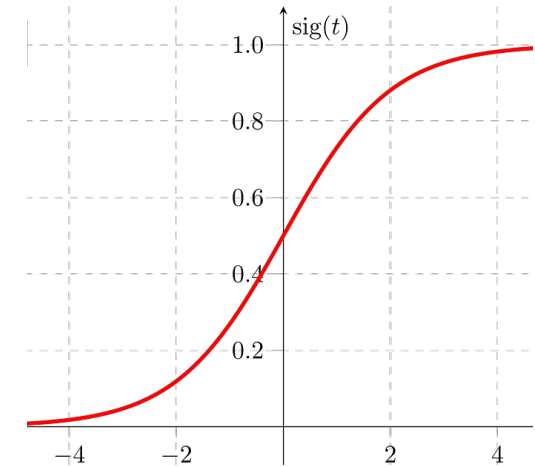- Uses Bayesian theorem to calculate posterior probability for each class

Linear Discriminant Analysis
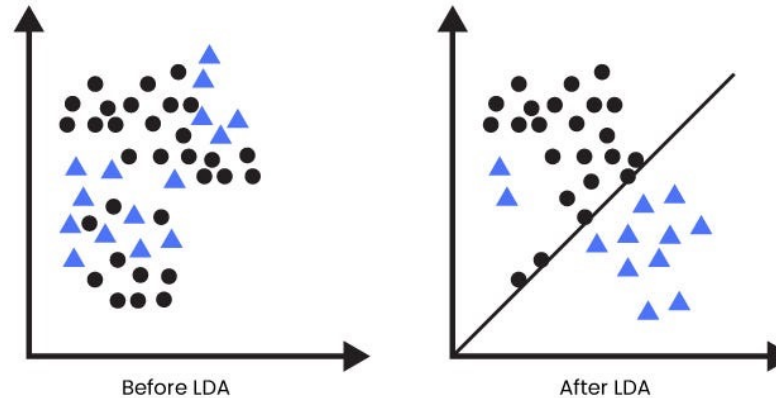
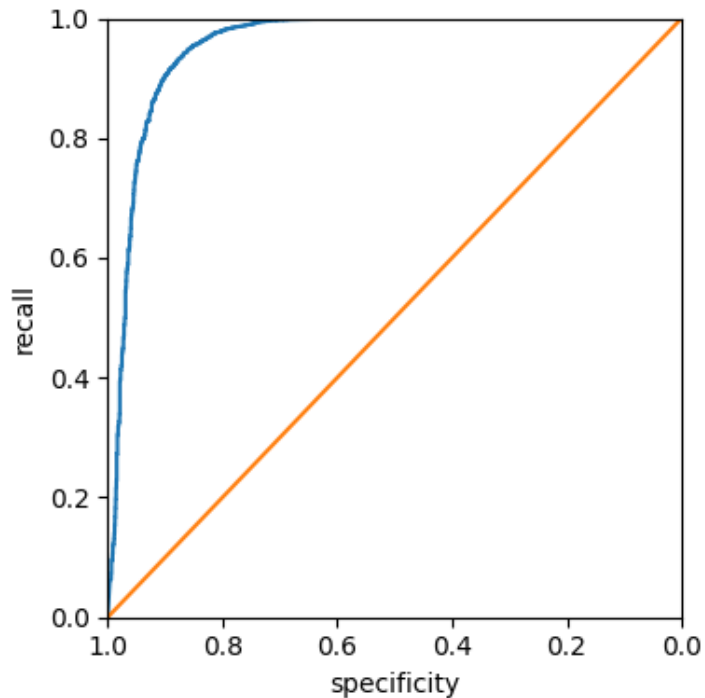- Aims to maximize separation between classes

Logistic Regression

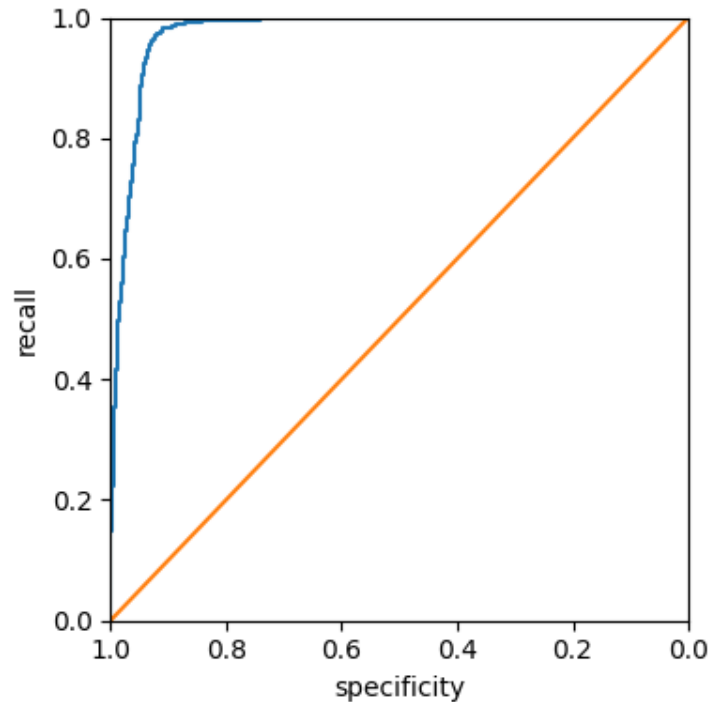- Creates probability distribution by fitting data to logistic function

Performance Metrics
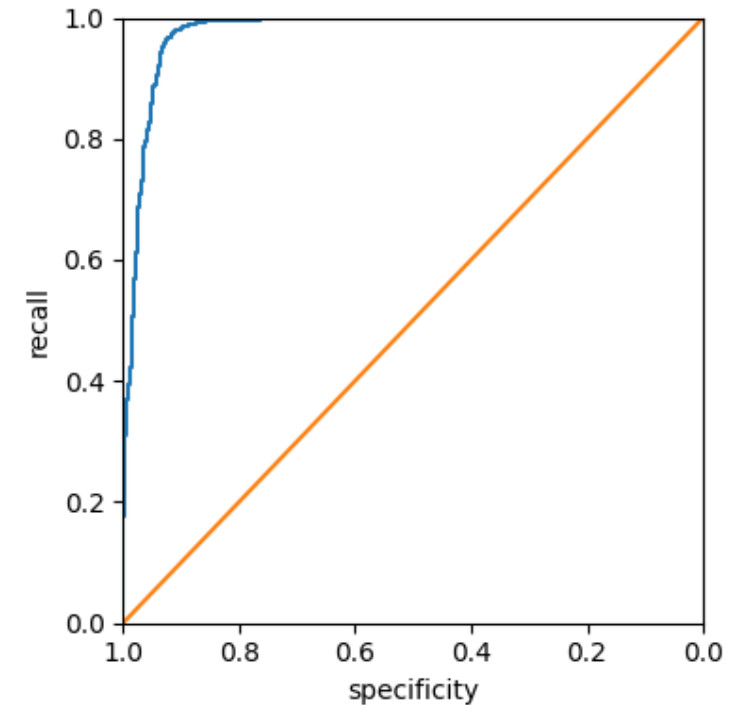
Train/test split: 85%/15%

Naïve Bayes

Linear Discriminant Analysis

⭐ Logistic Regression

- AUC: 0.956

- Accuracy: 0.944 or 94.4%

- AUC: 0.975

- Accuracy: 0.976 or 97.6%

- AUC: 0.976

- Accuracy: 0.980 or 98.0%