

WINE QUALITY ANALYSIS

BREONNA MOORE



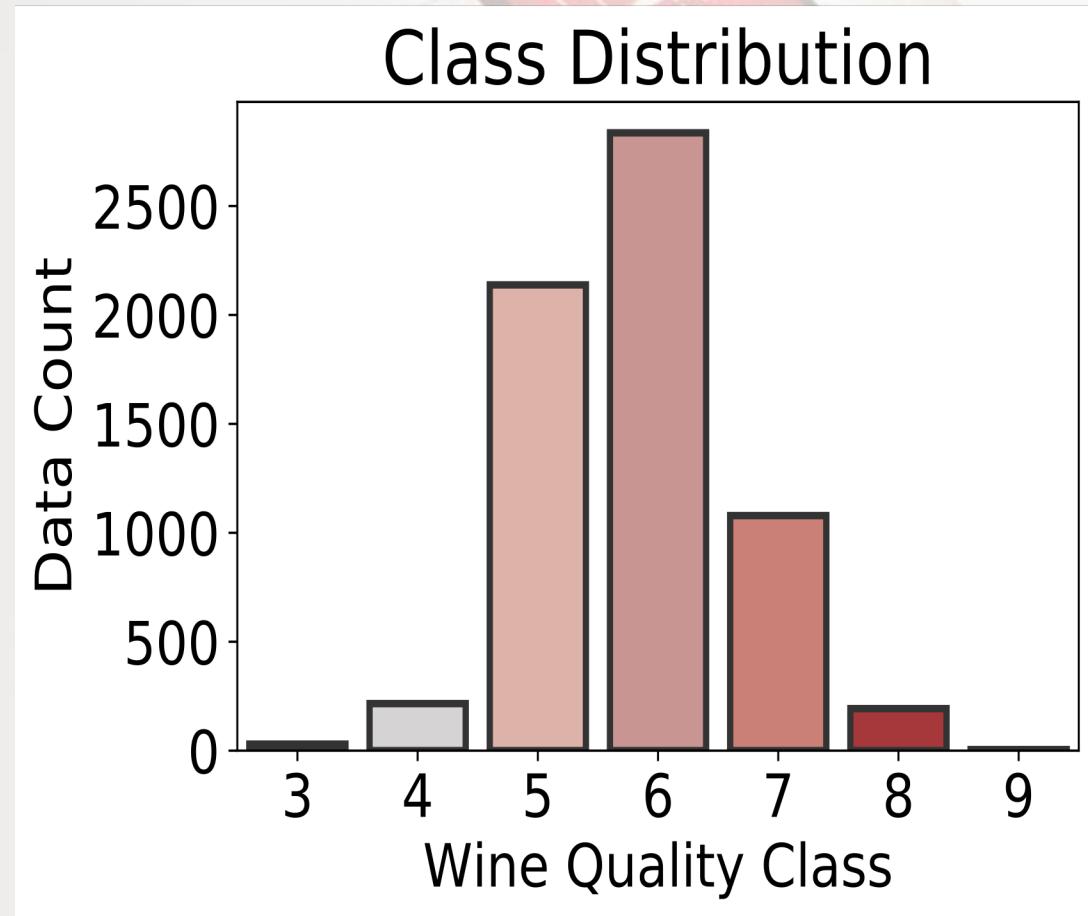
OBJECTIVE

- Predict Wine Quality
- Recall of Poor Wines
- Brand Protection
- Marketing Strategy
- Decision Process
- Revenue



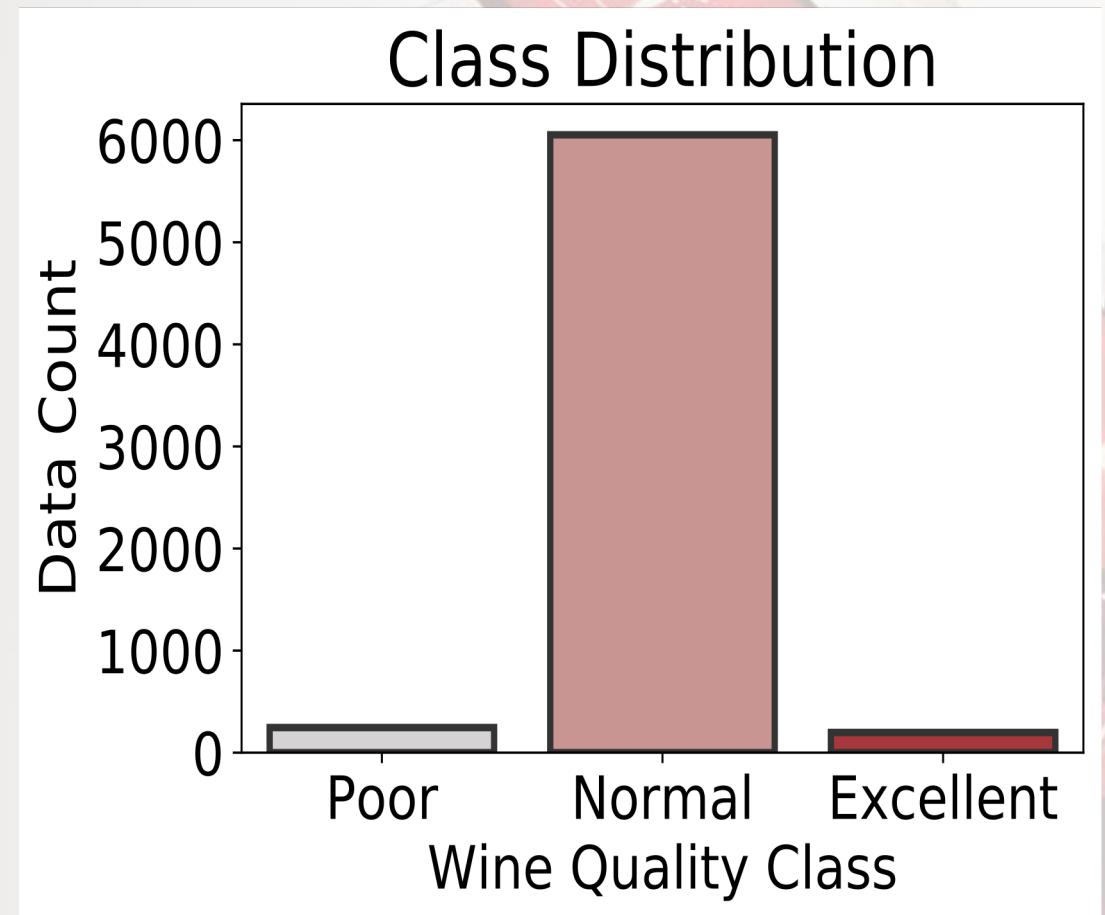
DATA

- UC Irvine MLR
- Features:
 - Free Sulfur Dioxide
 - Density
 - pH
 - Sulphates
 - Alcohol
 - Fixed Acidity
 - Chlorides
 - Volatile Acidity
 - Citric Acid
 - Residual Sugar
 - Total Sulfur Dioxide
- Target: Wine Quality



METHODOLOGY

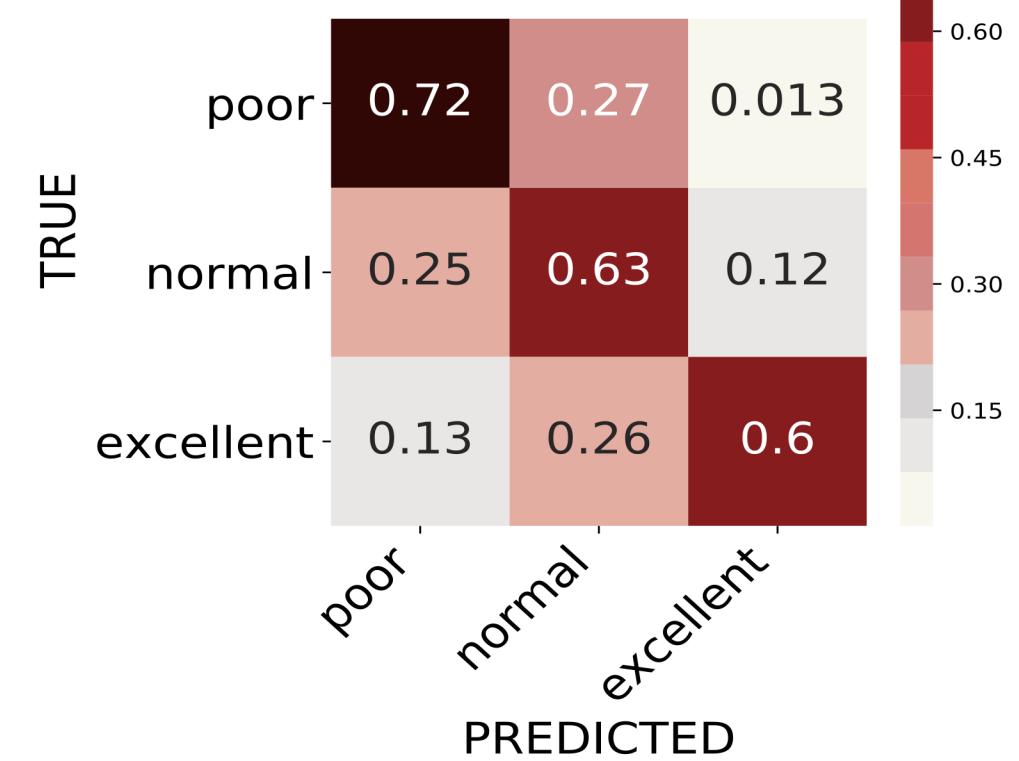
- Logistic Regression
- Random Forest
- Grid Search
- Over Sampling and Under Sampling
- Threshold Manipulation



MODELING RESULTS

- Random Forest
- Grid Search
- Class Weights
- Modified Thresholds
- Poor Quality Recall on Validation Data: 0.72

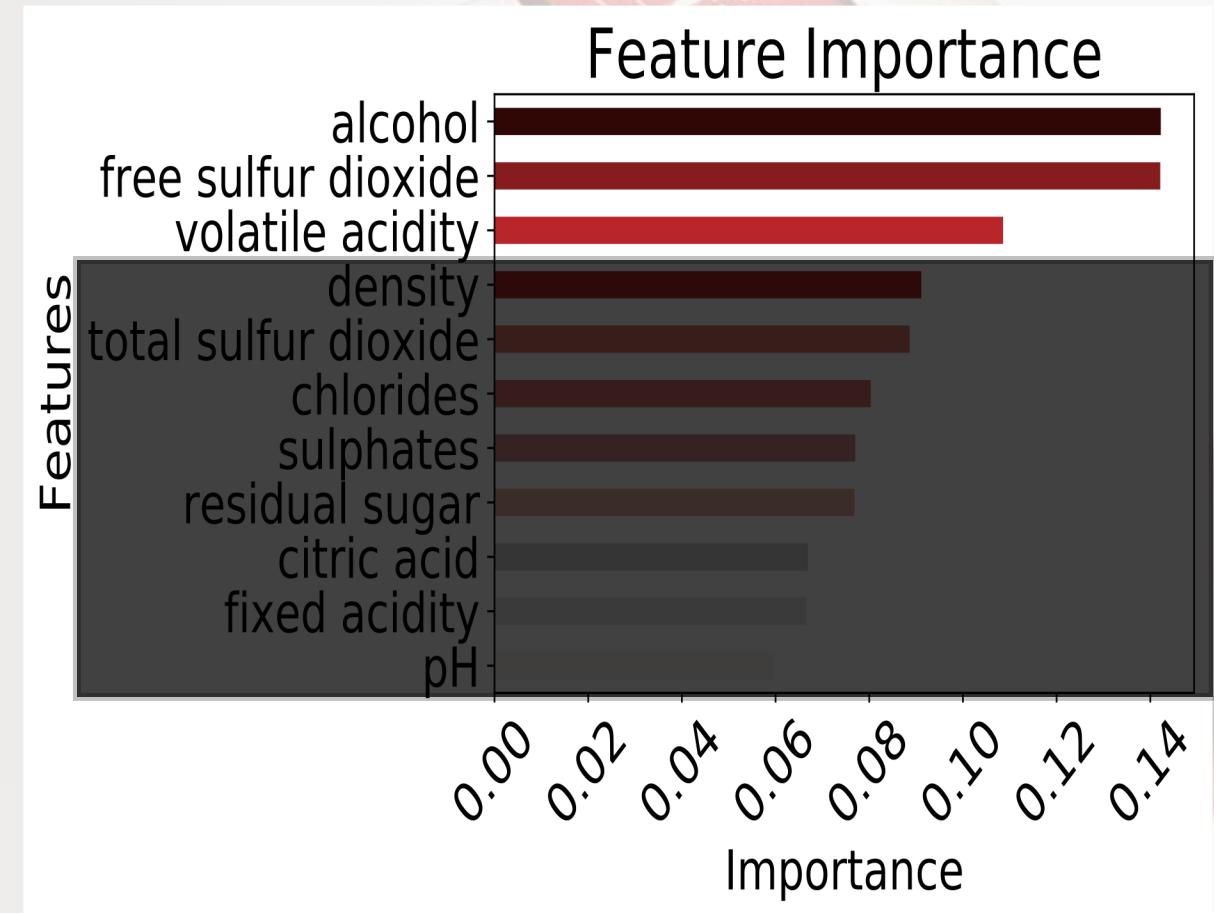
Wine Quality Confusion Matrix



CONCLUSIONS

- Poor Quality Recall on Test Data: 0.76
- Means for Top 3 Features:

	Poor	Normal	Excellent
Alcohol	10.39	10.17	12.24
F.S.D (g/L)	18.29	35.24	31.25
V. Acidity (g/100L)	0.42	0.30	0.31



FUTURE WORK

- Ensemble Models
- Collect More Minority Class Data
- Application



CHEERS & QNA



APPENDIX I - BASELINE

