Predicting Beer Styles

The Data

~74,000 home brewed beers

175 unique styles
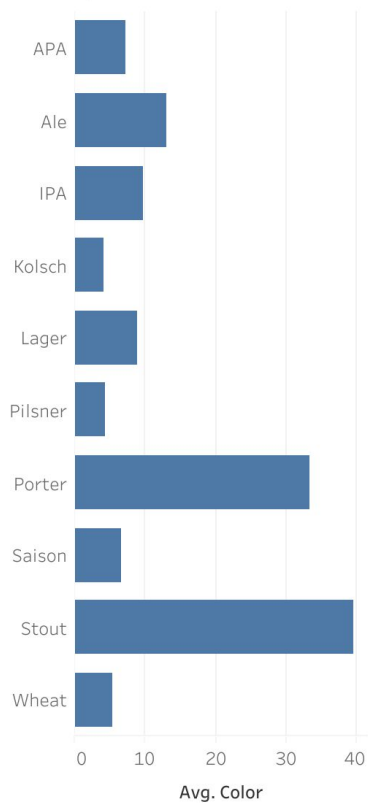
Identified 10 Major Style Categories

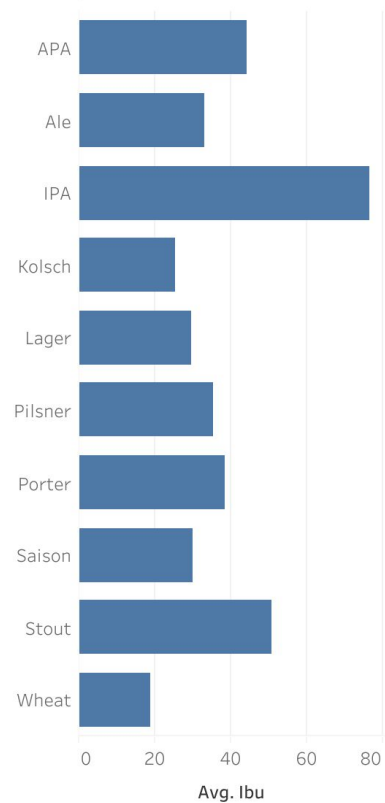## IPA List

IPA	
	American IPA
	Double IPA
	English IPA
	Imperial IPA
	Specialty IPA: Belgian IPA
	Specialty IPA: Black IPA
	Specialty IPA: Brown IPA
	Specialty IPA: Red IPA
	Specialty IPA: Rye IPA
	Specialty IPA: White IPA

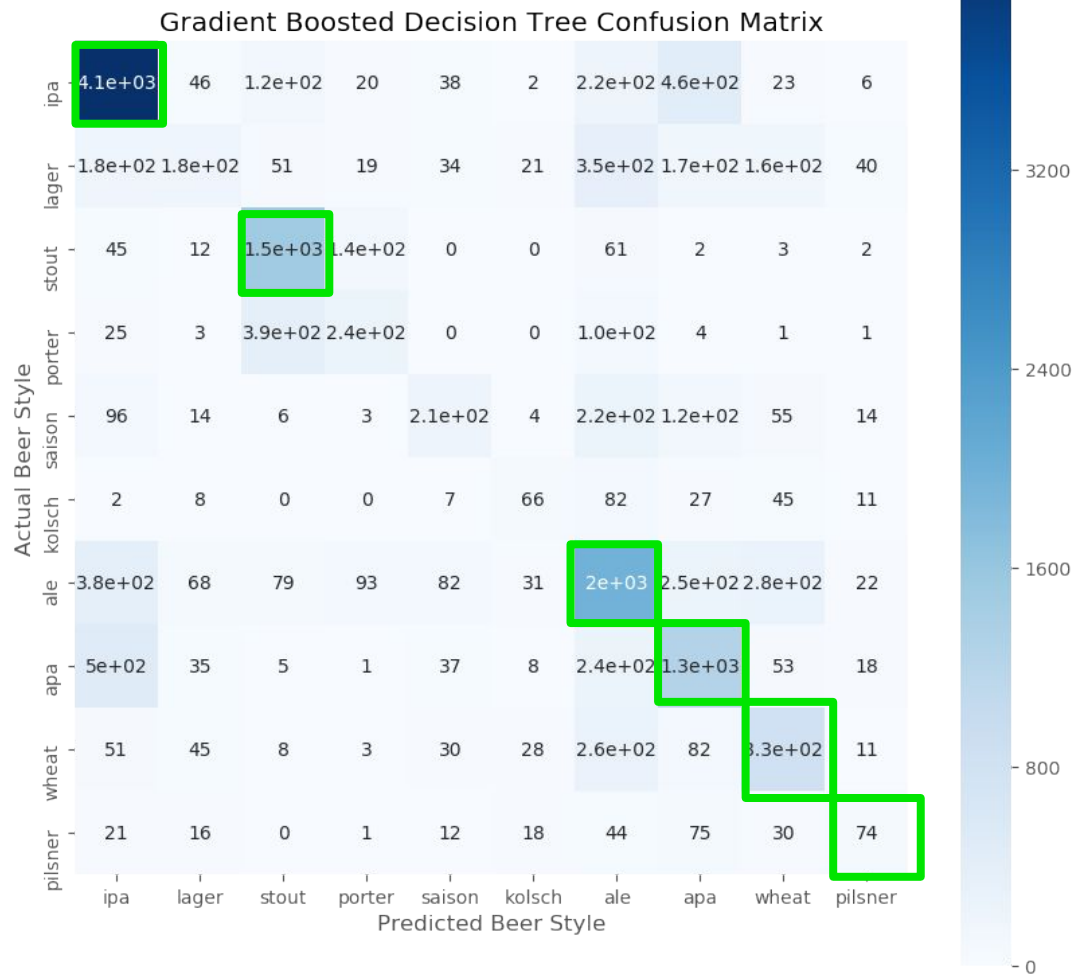# Features

Color per Style

IBU per Style

Model Selection
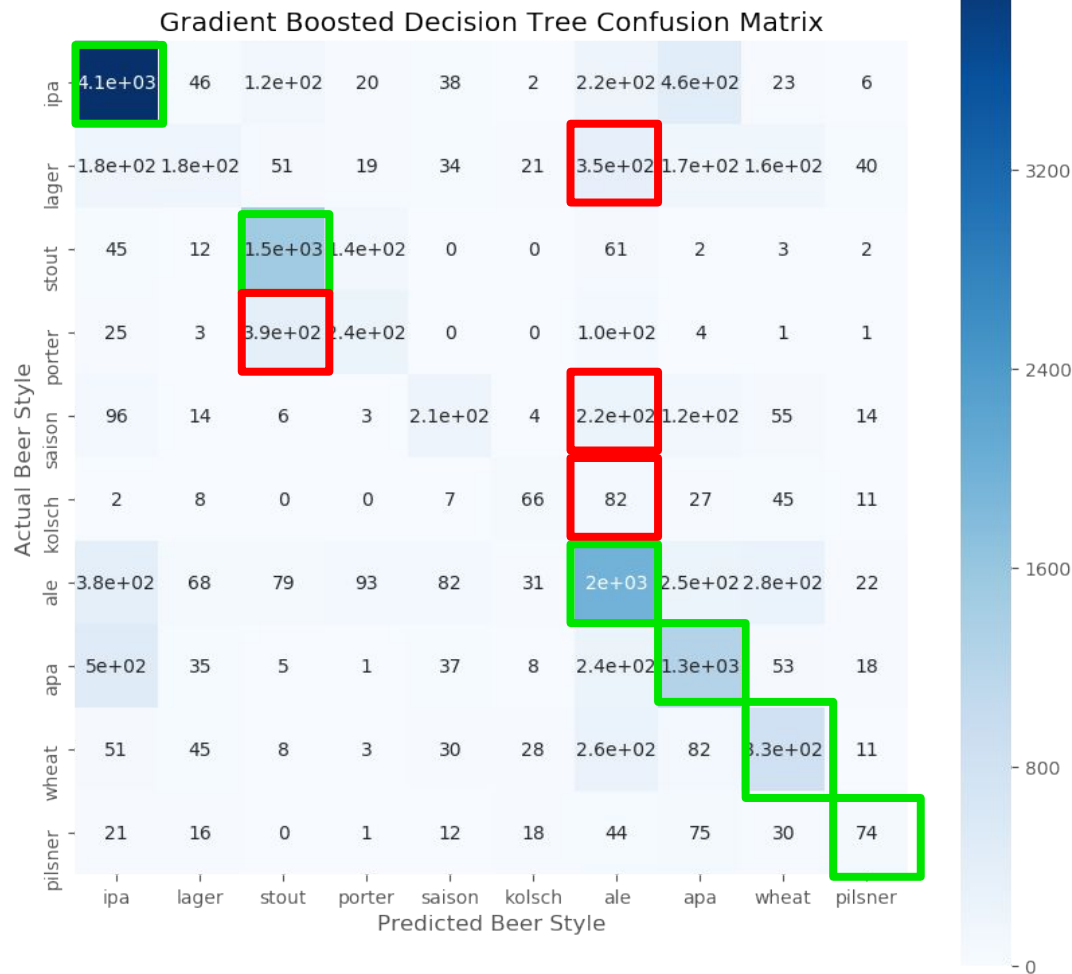
Gradient Boosted Decision Trees

Random Forest

Gradient Boosted Decision Tree

Accuracy Score: 61.95%

Gradient Boosted Decision Tree Confusion Matrix

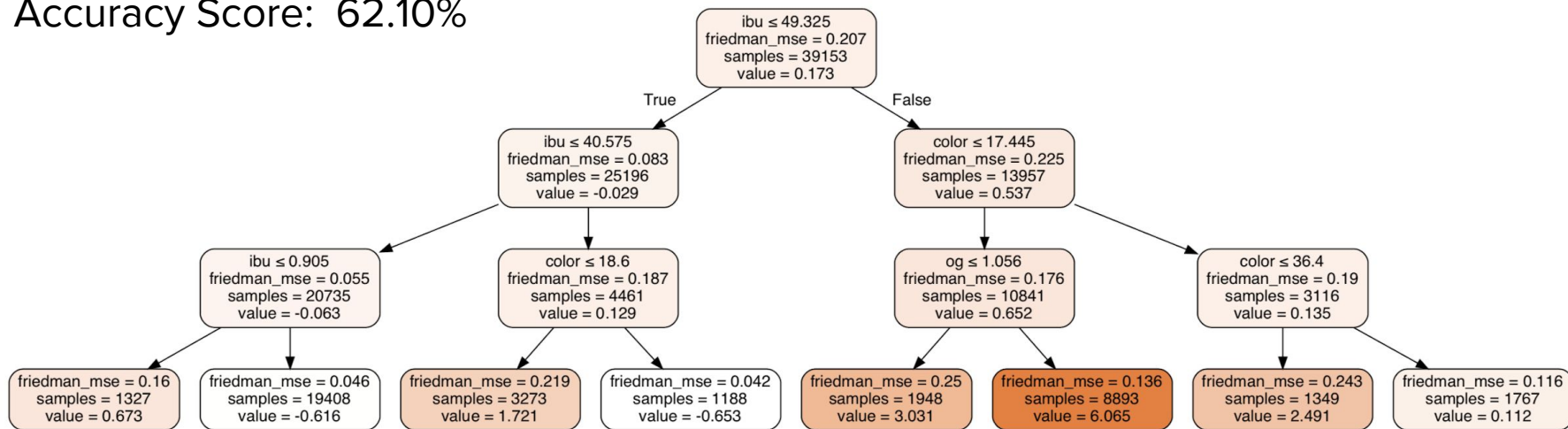# Gradient Boosted Decision Tree

Accuracy Score: 61.95%

Gradient Boosted Decision Tree Confusion Matrix

Gradient Boosted Decision Tree

Accuracy Score: 62.10%

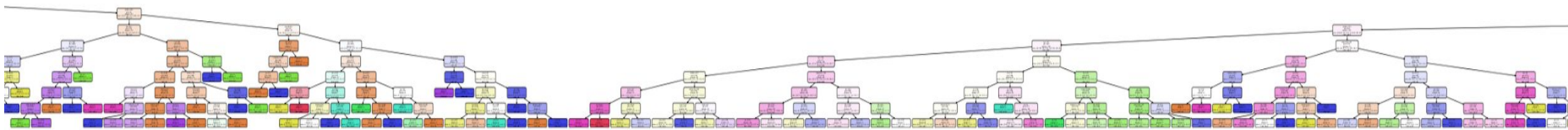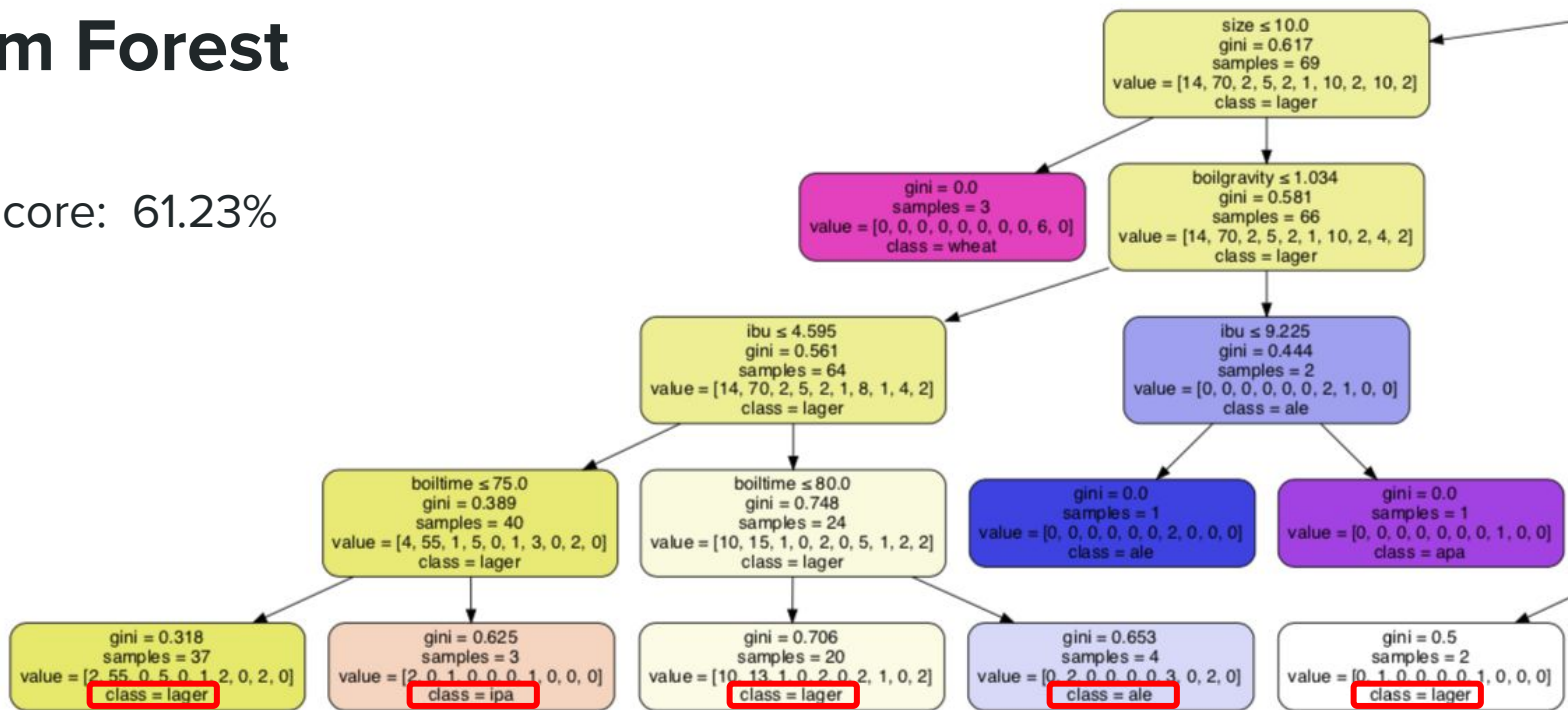# **Random Forest**

Accuracy score: 59.09%
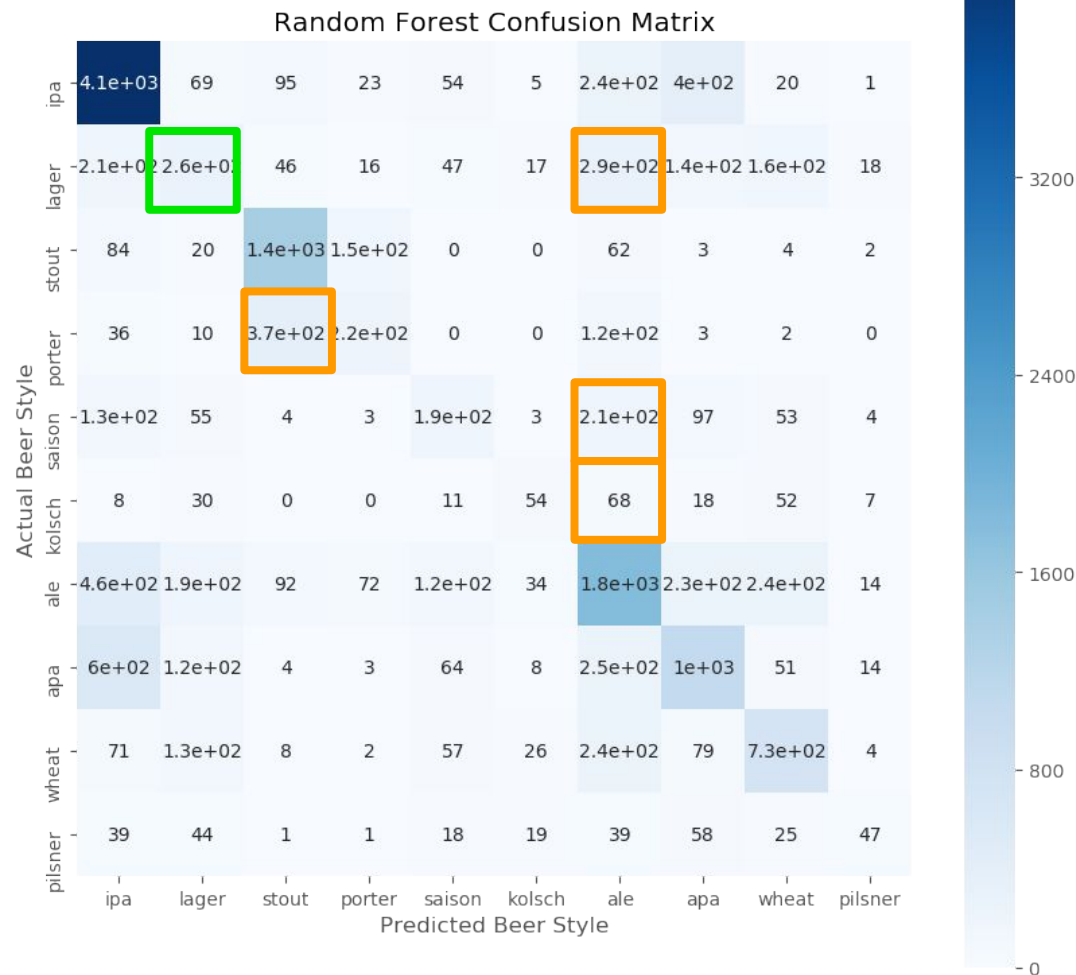
Random Forest

Accuracy score: 61.23%

Model Improvement: Ensembling

Voting Classifier

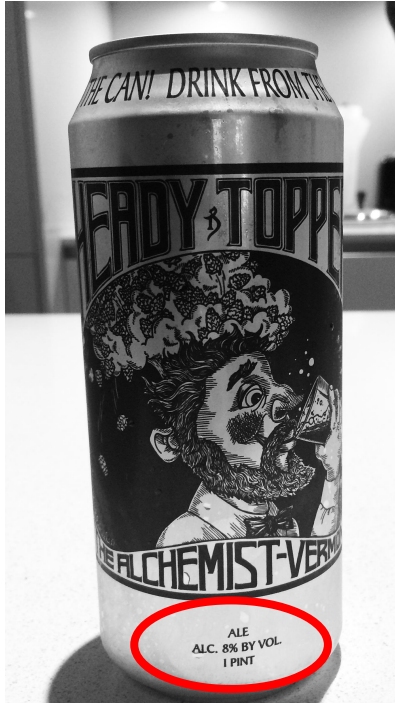   Gradient Boosted Decision Trees & Random Forest*

     Accuracy Score: 62.44%

*Note that the voting classifier did not change when Naive Bayes was added to the ensemble, indicating that it added no predictive power
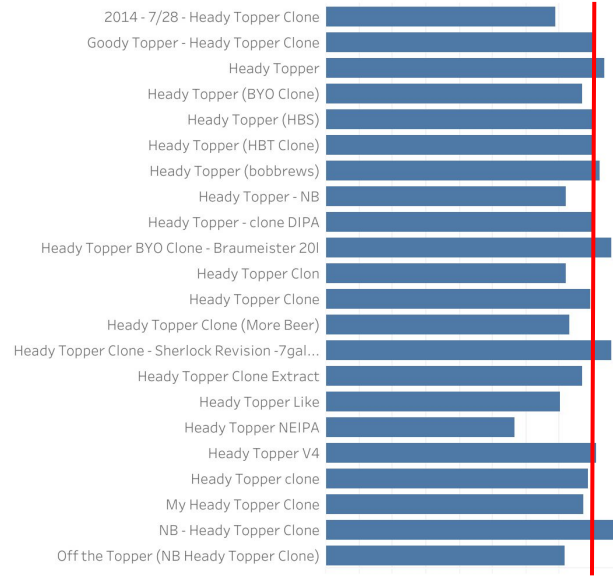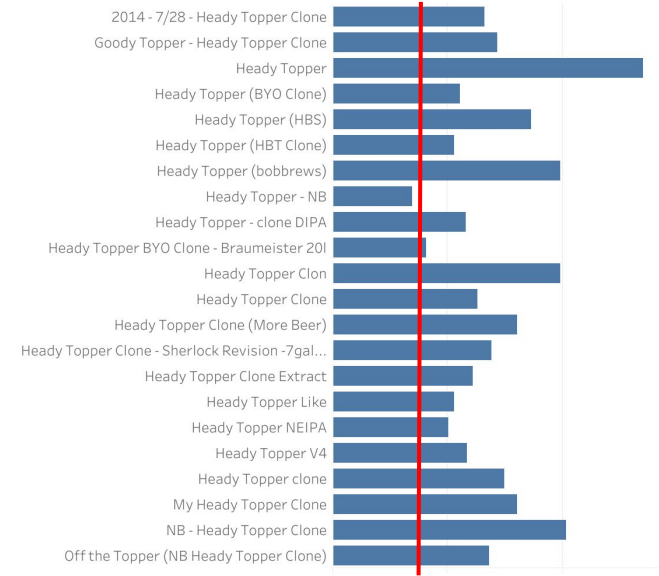
Let's see it perform!

Appendix

Appendix

Did anyone recreate the best beer on earth?

Heady Topper ABV

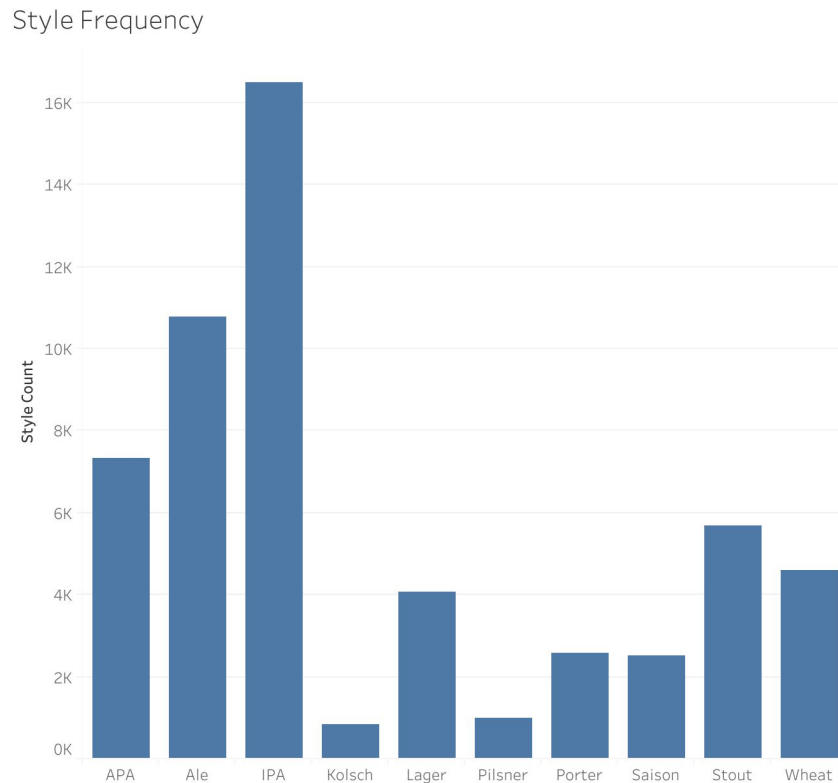|	
2014 - 7/28 - Heady Topper Clone	
Goody Topper - Heady Topper Clone	
Heady Topper	
Heady Topper (BYO Clone)	
Heady Topper (HBS)	
Heady Topper (HBT Clone)	
Heady Topper (bobbrews)	
Heady Topper - NB	
Heady Topper - clone DIPA	
Heady Topper BYO Clone - Braumeister 20l	
Heady Topper Clon	
Heady Topper Clone	
Heady Topper Clone (More Beer)	
Heady Topper Clone - Sherlock Revision -7gal...	
Heady Topper Clone Extract	
Heady Topper Like	
Heady Topper NEIPA	
Heady Topper V4	
Heady Topper clone	
My Heady Topper Clone	
NB - Heady Topper Clone	
Off the Topper (NB Heady Topper Clone)	

Heady Topper IBU

2014 - 7/28 - Heady Topper Clone	
Goody Topper - Heady Topper Clone	
Heady Topper	
Heady Topper (BYO Clone)	
Heady Topper (HBS)	
Heady Topper (HBT Clone)	
Heady Topper (bobbrews)	
Heady Topper - NB	
Heady Topper - clone DIPA	
Heady Topper BYO Clone - Braumeister 20l	
Heady Topper Clon	
Heady Topper Clone	
Heady Topper Clone (More Beer)	
Heady Topper Clone - Sherlock Revision -7gal...	
Heady Topper Clone Extract	
Heady Topper Like	
Heady Topper NEIPA	
Heady Topper V4	
Heady Topper clone	
My Heady Topper Clone	
NB - Heady Topper Clone	
Off the Topper (NB Heady Topper Clone)	

The Data

~56,000 beers remaining after removing "Other"

Goose Island

Style Num	Style	Name
Null	Extra Special/Strong Bitter (ESB)	Goose Island Brewery - Honkers Ale Clone
	Ordinary Bitter	Goose Island Honkers Ale Clone
IPA	American IPA	Mock Goose Island IPA
	English IPA	Goose Island IPA Clone
	Imperial IPA	Goose Island The Illinois
	Specialty IPA: Red IPA	Goose Island rambler IPA - Clone
Lager	American Light Lager	Goose Island Urban Wheat Ale
Stout	Irish Stout	Goose Island Sweet Porter Extract Kit
Porter	American Porter	Goose Island Porter
Saison	Saison	Clone Goose Island Sophie
Kolsch	Kölsch	Goose Island Kolsh Clone

Imbalanced Classes

Style Frequency

Gradient Boosted Decision Tree

Random Forest