

Classifying Poisonous Mushrooms:

Pharmaceutical Company

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As of march 2020 sales for medicinal mushroom has topped:

\$5 Million

According to [timesunion.com](https://www.timesunion.com)

Medicinal Mushrooms: Current Use in Clinical Practice

- Cancer
- Liver disease
- Antibacterial
- Tumor
- Diabetes
- Skin cream supplements



Some Physical Characteristics of Mushrooms

Cap diameter

Cap color

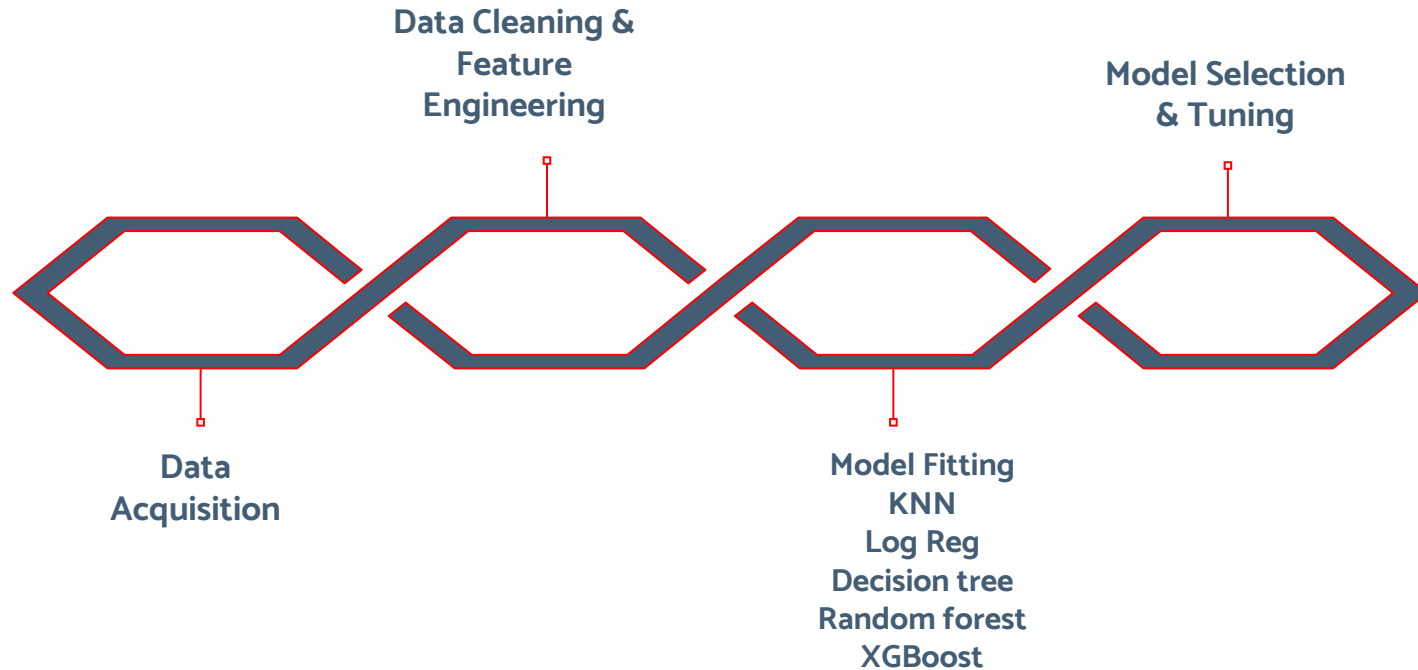
Yellow, brown, red, white etc

Stem Height

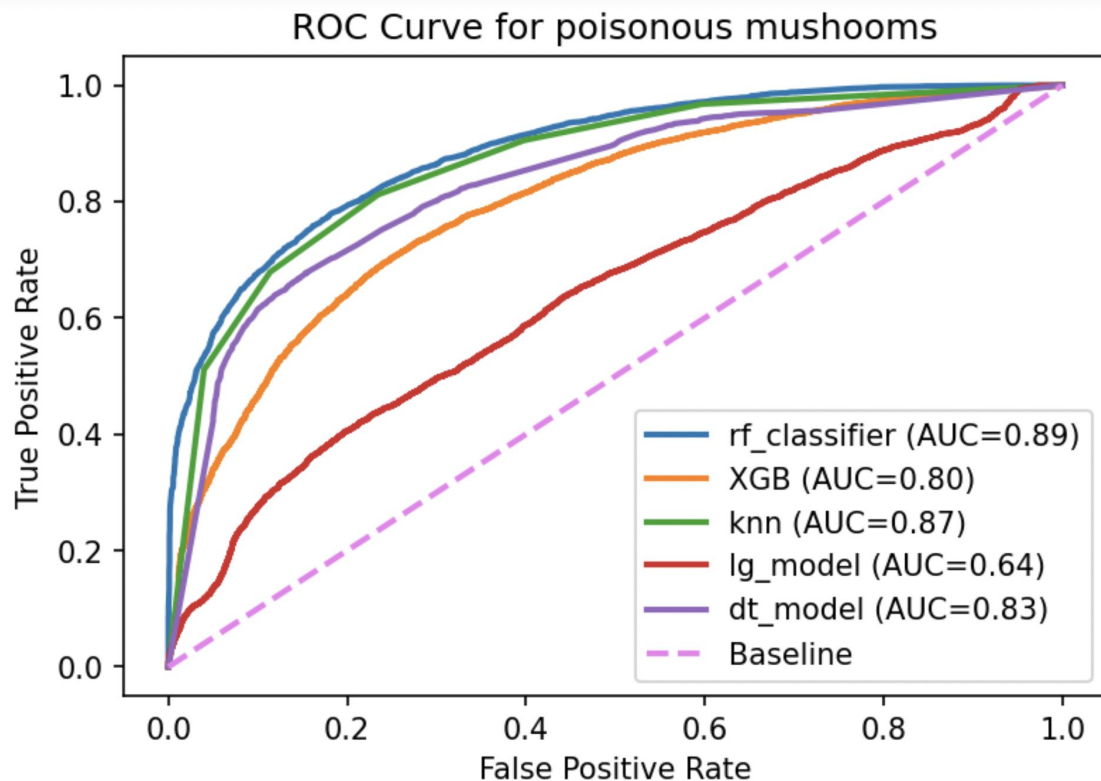
Has ring or not



Methodology



Result



Random Forest

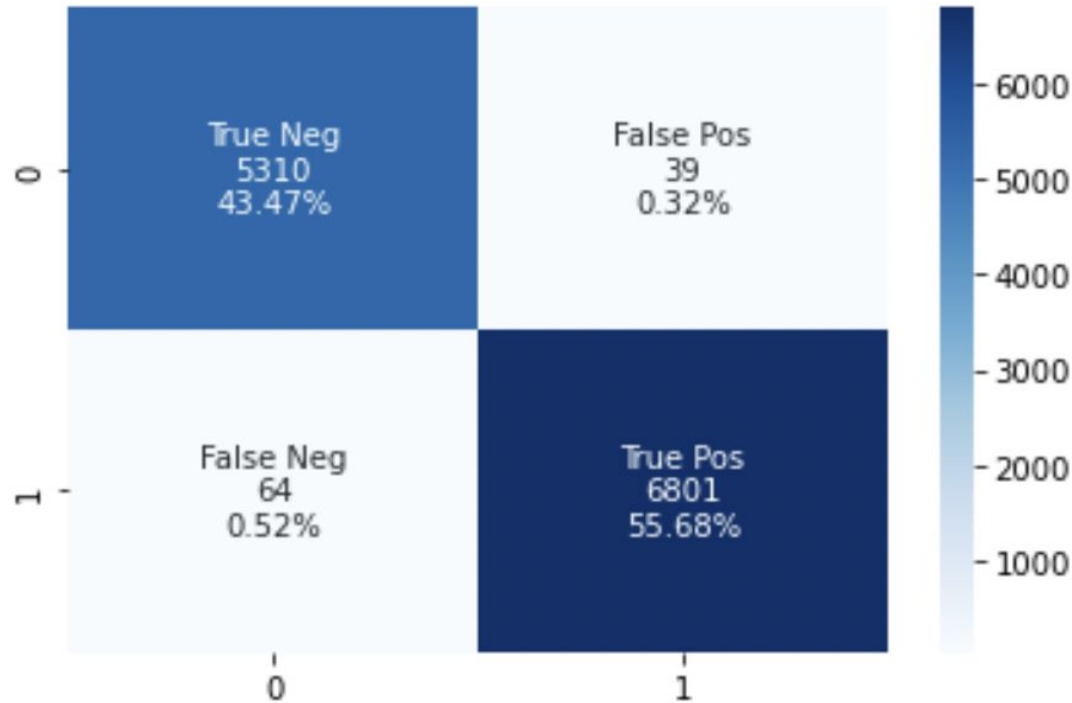
Accuracy: 0.79

Recall: 0.81

F-beta score: 0.815

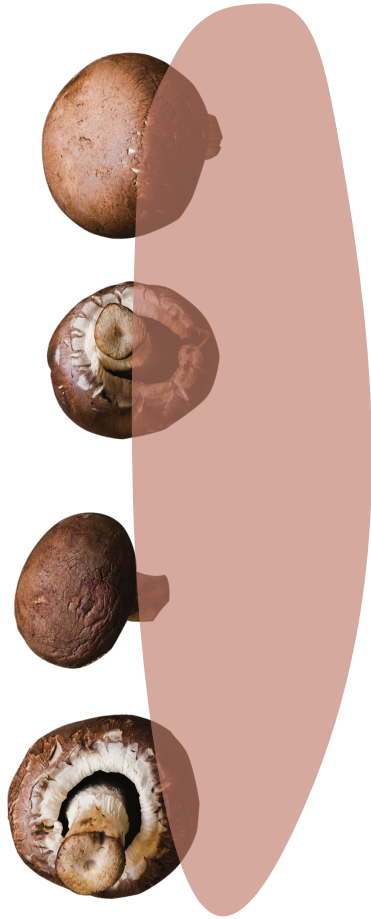


Random Forest with hyperparameter tuning



1 = Poisonous

0 = Edible



Random forest performance



Accuracy: 0.988

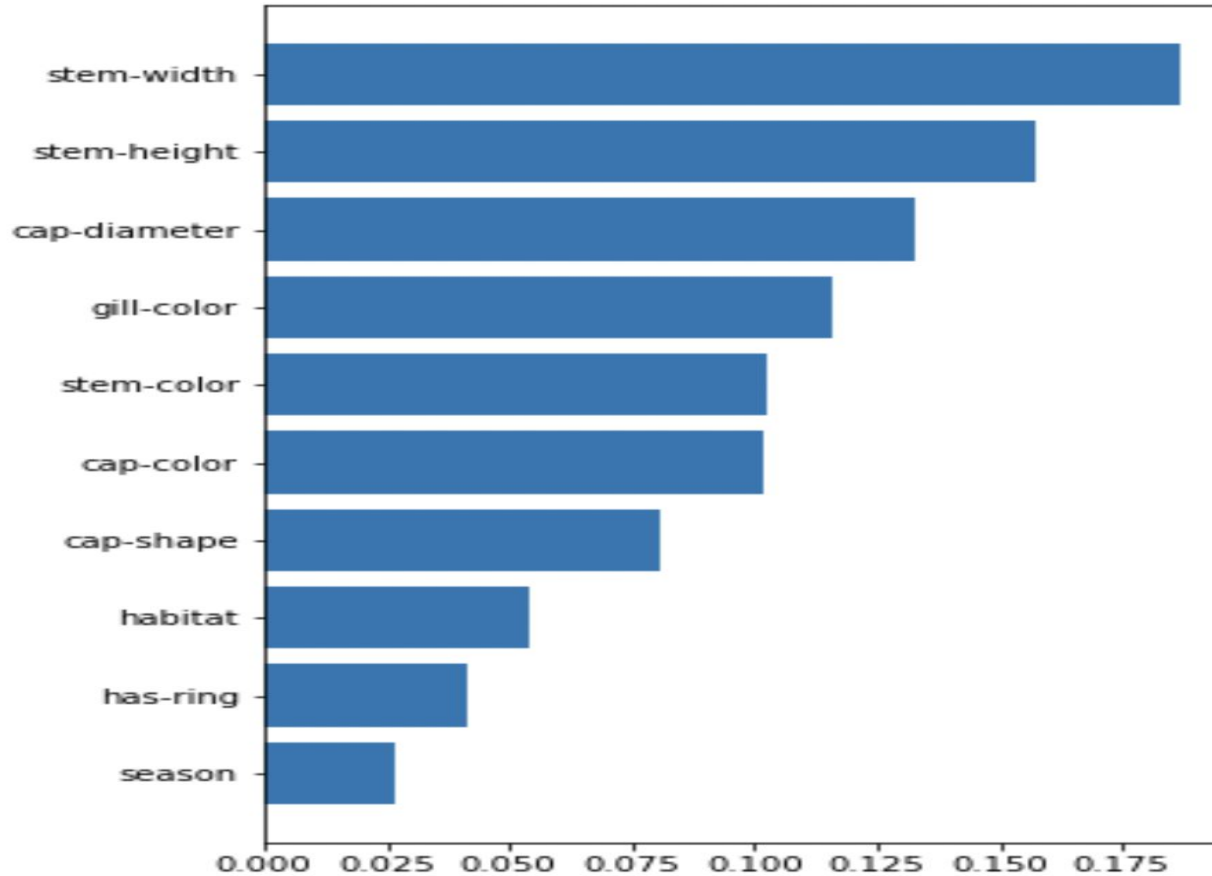


Recall : 0.986



F-beta : 0.99

Feature Importance



Takeaways

1

Poisonous Mushrooms can be accurately predicted by using random forest and relevant features

2

Random Forest model after tuning and adding more features gave the accuracy of 98% on the test dataset

3

Stem width, Stem height and Cap diameter are found as the most relevant feature using RF classifier





Future work

- Add more features
- Fine Tuning hyperparameter for XGBoost model

Thank you!



