Practical Data Science
(Ensemble Model Tuning)

Solve the following problems.

Problem: More attempts at Predictive Analytics (Hack the ML algorithm)

Go through the following problem of kaggle:
https://www.kaggle.com/c/ghouls-goblins-and-ghosts-boo/

Task1: Apply Bagging Ensemble Algorithms

a. Apply model tuning of Bagged-Tree algorithm with different values for its parameters and build the model in the ideal range and findout CV error. Find out the test accuracy after submitting to kaggle.

b. Apply model tuning of RandomForest algorithm with different values for its parameters and build the model in the ideal range and findout CV error. Find out the test accuracy after submitting to kaggle.

c. Apply model tuning of ExtraTree algorithm with different values for its parameters and build the model in the ideal range and findout CV error. Find out the test accuracy after submitting to kaggle.

Task2: Apply Boosted Ensemble Algorithms

a. Apply model tuning of AdaBoost algorithm with different values for its parameters and build the model in the ideal range and findout CV error. Find out the test accuracy after submitting to kaggle.

b. Apply model tuning of Gradient Boosting algorithm with different values for its parameters and build the model in the ideal range and findout CV error. Find out the test accuracy after submitting to kaggle.

Task 3: Apply Voting Ensemble Algorithms

Note: Use RandomForest, AdaBoost and KNN models as base models

a. Apply model tuning of Hard Voting algorithm with different values for its parameters and build the model in the ideal range and findout CV error. Find out the test accuracy after submitting to kaggle.

b. Apply model tuning of Soft Voting algorithm with different values for its parameters and build the model in the ideal range and findout CV error. Find out the test accuracy after submitting to kaggle.

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Task4: Apply Stacking Ensemble Algorithms

Note: Use RandomForest, AdaBoost and KNN models as base models

a. Apply model tuning of Stacking Bagged-Tree algorithm with different values for its parameters and build the model in the ideal range and findout CV error. Find out the test accuracy after submitting to kaggle.