Exercise 1 : Algorithms with tunable parameters

Algorithm	Hyperparamters	Possible range
Adaboost classifier: Classification with decision trees, suited with weak learners (a lot of them). An AdaBoost classifier is a meta-estimator that begins by fitting a classifier on the original dataset and then fits additional copies of the classifier on the same dataset but where the weights of incorrectly classified instances are adjusted such that subsequent classifiers focus more on difficult cases.[1]	n_estimators, to estimate how many maximum number of estimators to be used. Learning rate, Learning rate shrinks the contribution of each classifier by the value of this parameter. Maximum number of splits, That is the depth of each tree.	n_estimators = [1-500] train as many as you can, can be judged by looking at test_error vs number of estimators. Learning_rate = [0.1-0.001] Depth = [1 -5]
Support Vector Machine,SVC: A Support Vector Machine (SVM) is a discriminative classifier formally defined by a separating hyperplane.[2][3]	*C=1.0*, Penalty parameter C of the error term. how much do you want to avoid misclassifying a particular data point. kernel='rbf', Mathematical functions to transform the data into required form. Could be linear, nonlinear or polynomial.	C = [1.0-100] Kernel = ['linear', 'poly', 'rbf', 'sigmoid']

Bibliography:

1	Online, Accessed on 02.05.2019 [https://scikit-learn.org/stable/modules/generated/sklearn.ensemble.AdaBoostClassifier.html]
2	Online, Accessed on 02.05.2019 [https://medium.com/machine-learning-101/chapter-2-svm-support-vector-machine-theory-f0812effc72]
3	Online, Accessed on 02.05.2019 [https://scikit-learn.org/stable/modules/generated/sklearn.svm.SVC.html]

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