CS7641 A1: Supervised Learning

Scott Schmidl
sschmidl3@gatech.edu

I. Introduction - Dataset Explanation

DT: Pruning Boosting: number of Weak Learners NN: Hidden Layer Size (Width, Depth) SVM: Kernel Type KNN: K

You kinda don't. It would suffice to represent this as a bar chart or, even better, treat different categories as separate learning curves to consider. A good example of a categorical hyperparameter is an SVM kernel, BTW.

II. Decision Trees

Quisque faucibus egestas fermentum. THIS IS WHERE I WILL DISCUSS DECISION TREE CLASSIFIER.

A. Dataset 1

Nulla consequat, tortor sit amet interdum tempus, ante mauris vulputate dui, et bibendum ipsum nisl vitae ante. THIS IS WHERE I WILL DISCUSS DATASET 1.

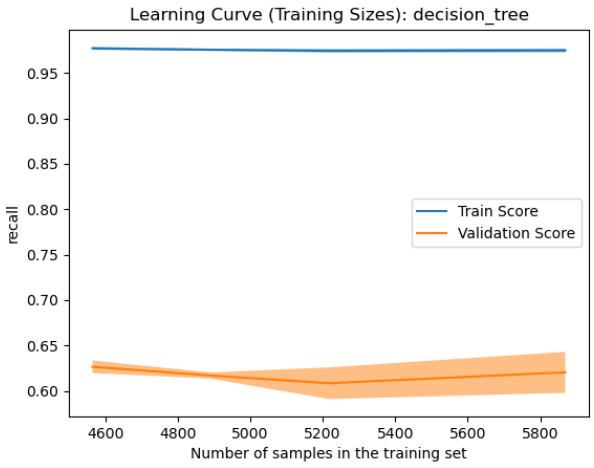


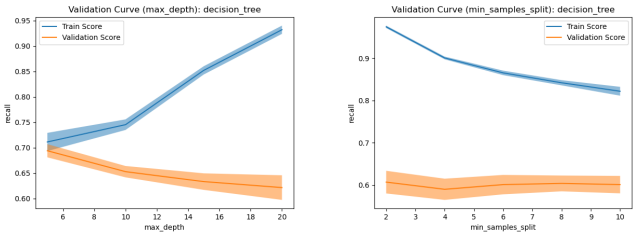
Fig. 1: DT Training Sizes

TESTING HERE

B. Dataset 2

Pellentesque efficitur magna pharetra, molestie libero vel, tempus justo. THIS IS WHERE I WILL DISCUSS DATASET 2.

TESTING HERE
TESTING HERE



(a) DT Max Depth (b) DT Min Samples Split

Fig. 2: DT VALIDATION CURVES

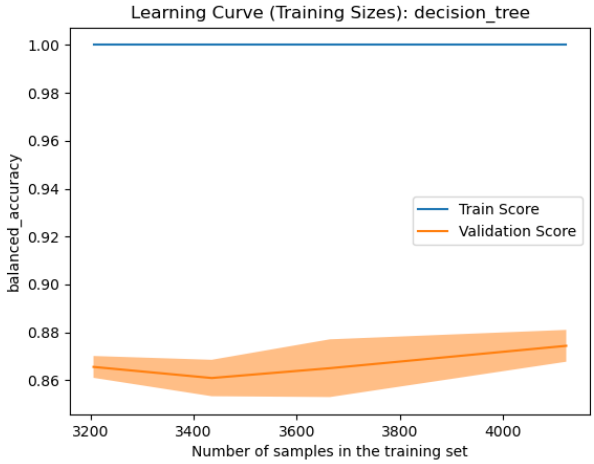
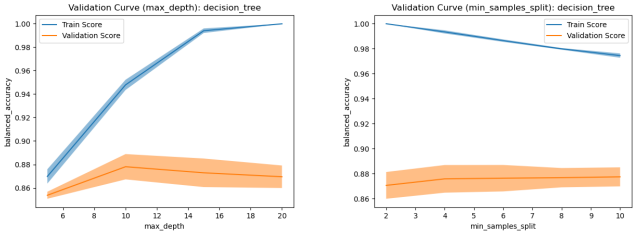


Fig. 3: DT Training Sizes

III. KNN

this is knn. THIS IS WHERE I WILL DISCUSS K NEAREST NEIGHBORS CLASSIFIER.



(a) DT Max Depth (b) DT Min Samples Split

Fig. 4: DT VALIDATION CURVES

A. Dataset 1

Nulla consequat, tortor sit amet interdum tempus, ante mauris vulputate dui, et bibendum ipsum nisl vitae ante. THIS IS WHERE I WILL DISCUSS DATASET 1.

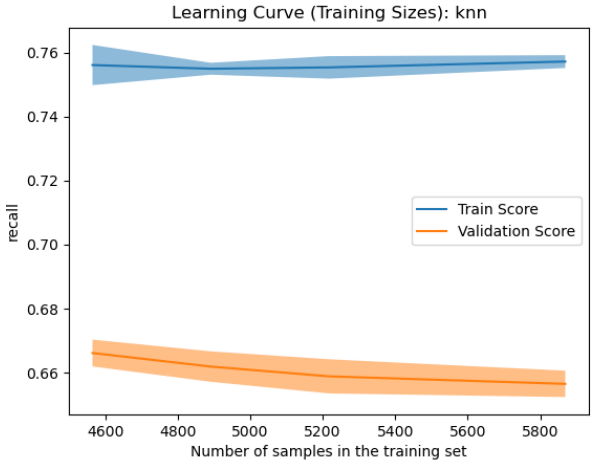
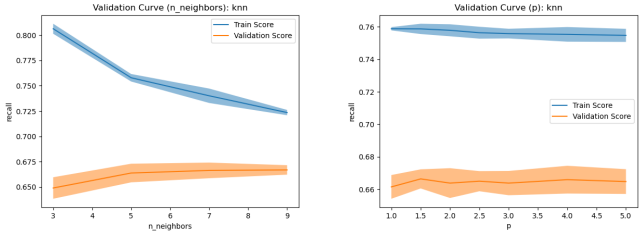


Fig. 5: KNN Training Sizes

TESTING HERE



(a) KNN N Neighbors (b) KNN P

Fig. 6: KNN VALIDATION CURVES

B. Dataset 2

Pellentesque efficitur magna pharetra, molestie libero vel, tempus justo. THIS IS WHERE I WILL DISCUSS DATASET 2.

TESTING HERE
TESTING HERE

IV. Boosting

Quisque faucibus egestas fermentum. THIS IS WHERE I WILL DISCUSS GRADIENT BOOSTING CLASSIFIER.

A. Dataset 1

Nulla consequat, tortor sit amet interdum tempus, ante mauris vulputate dui, et bibendum ipsum nisl vitae ante. THIS IS WHERE I WILL DISCUSS DATASET 1.

TESTING HERE
TESTING HERE

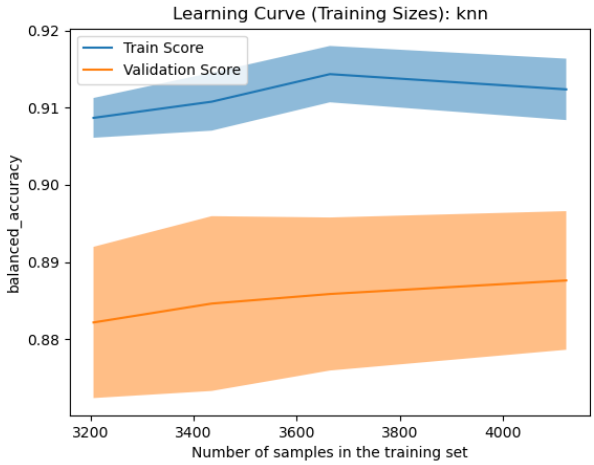
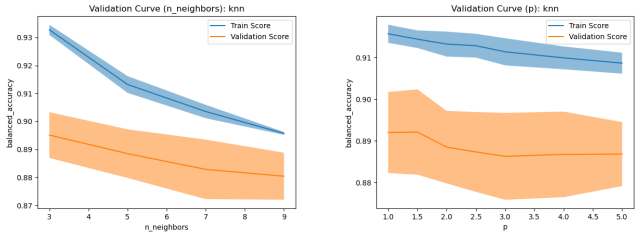


Fig. 7: KNN Training Sizes



(a) KNN N Neighbors (b) KNN P

Fig. 8: KNN VALIDATION CURVES

B. Dataset 2

Pellentesque efficitur magna pharetra, molestie libero vel, tempus justo. THIS IS WHERE I WILL DISCUSS DATASET 2.

TESTING HERE
TESTING HERE

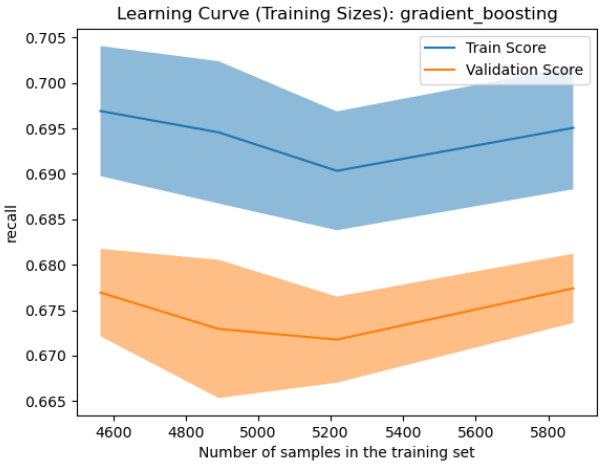
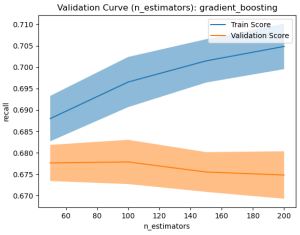
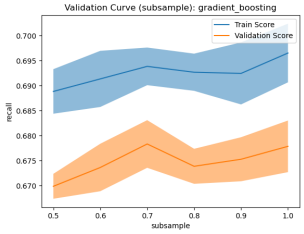


Fig. 9: GBC Training Sizes



(a) GBC N Estimators



(b) GBC Subsamples

Fig. 10: GBC VALIDATION CURVES

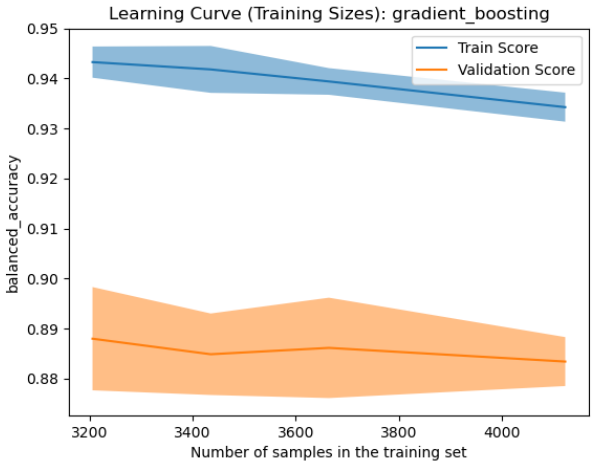


Fig. 11: GBC Training Sizes

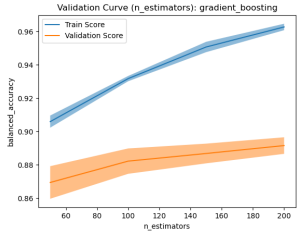
V. Neural Networks

Quisque faucibus egestas fermentum.THIS IS WHERE I WILL DISCUSS MULTILAYER PERCEPTRON CLASSIFIER.

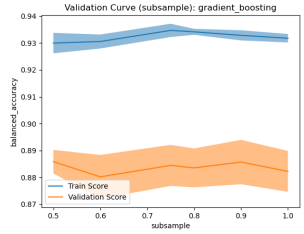
A. Dataset 1

Nulla consequat, tortor sit amet interdum tempus, ante mauris vulputate dui, et bibendum ipsum nisl vitae ante. THIS IS WHERE I WILL DISCUSS DATASET 1.

TESTING HERE
TESTING HERE
TESTING HERE



(a) GBC N Estimators



(b) GBC Subsamples

Fig. 12: GBC VALIDATION CURVES

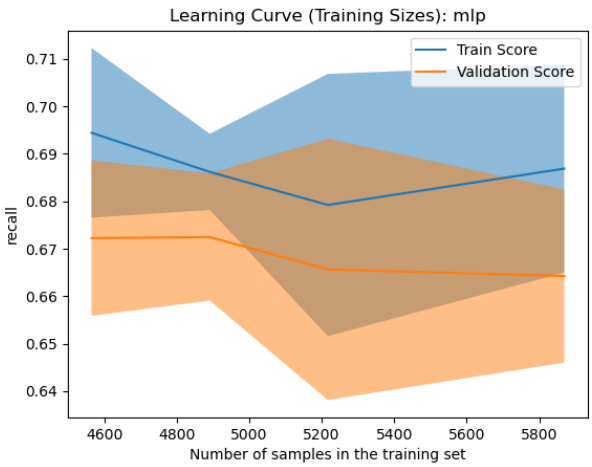
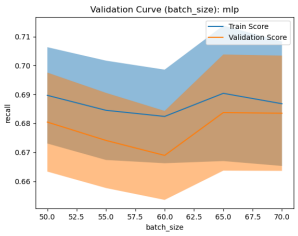
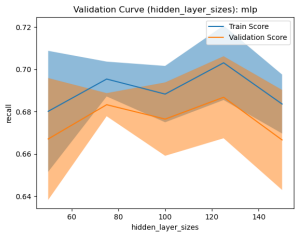


Fig. 13: MLP Training Sizes



(a) MLP Batch Size



(b) MLP Hidden Layer Sizes

Fig. 14: MLP VALIDATION CURVES

B. Dataset 2

Pellentesque efficitur magna pharetra, molestie libero vel, tempus justo. THIS IS WHERE I WILL DISCUSS DATASET 2.

TESTING HERE
TESTING HERE
TESTING HERE

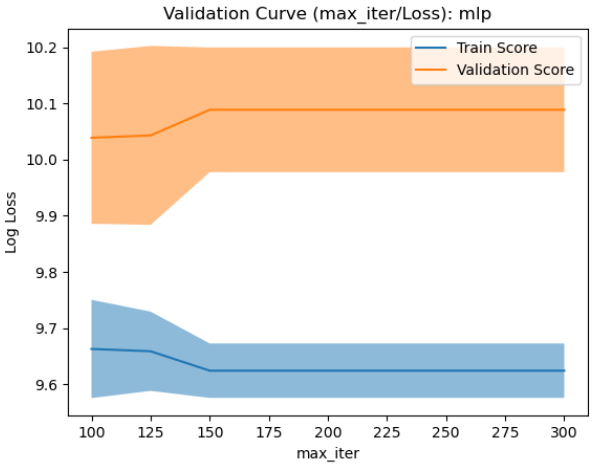


Fig. 15: MLP Training Sizes

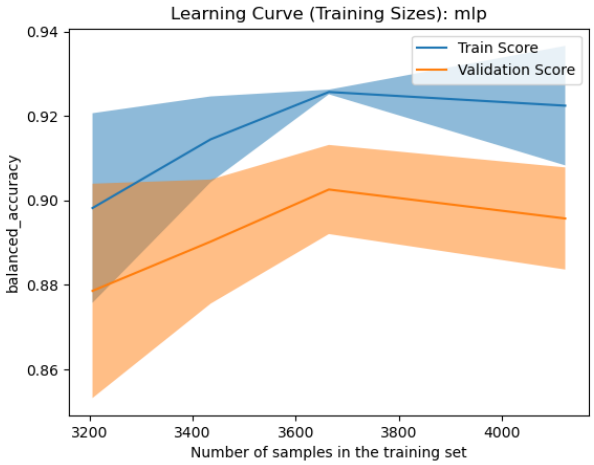
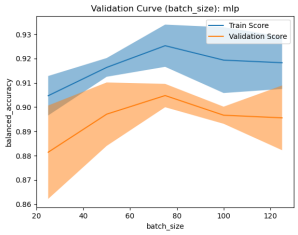
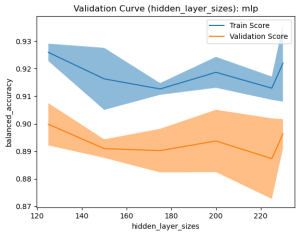


Fig. 16: MLP Training Sizes



(a) MLP Batch Size



(b) MLP Hidden Layer Sizes

Fig. 17: MLP VALIDATION CURVES

VI. SVM

Quisque faucibus egestas fermentum.THIS IS WHERE I WILL DISCUSS SUPPORT VECTOR MACHINE CLASSIFIER.

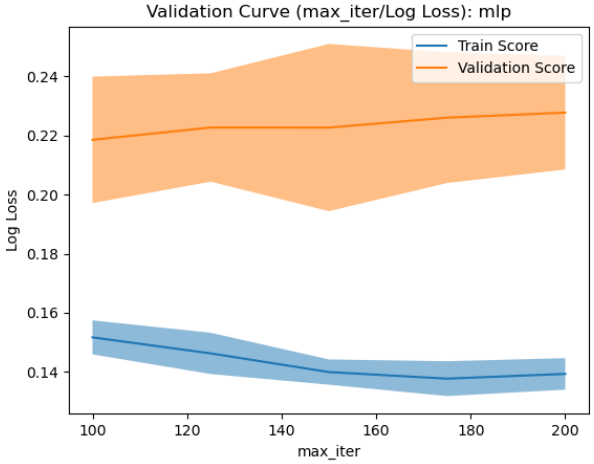


Fig. 18: MLP Training Sizes

A. Dataset 1

Nulla consequat, tortor sit amet interdum tempus, ante mauris vulputate dui, et bibendum ipsum nisl vitae ante. THIS IS WHERE I WILL DISCUSS DATASET 1.

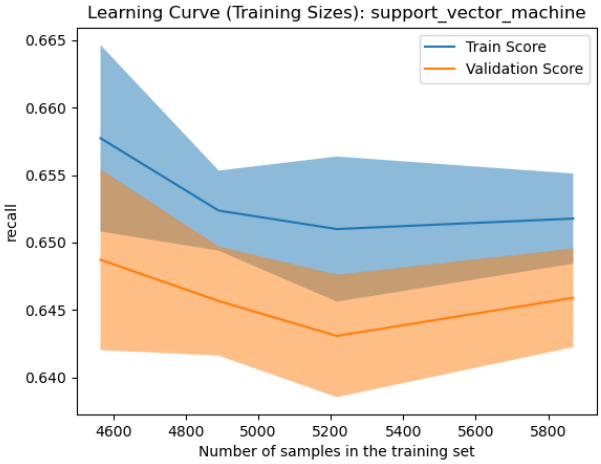
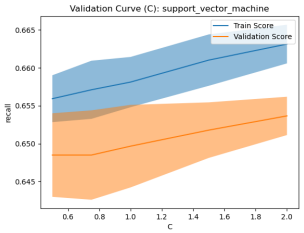
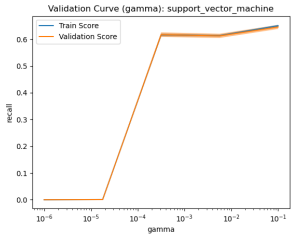


Fig. 19: SVM Training Sizes

TESTING HERE



(a) SVM C



(b) SVM Gamma

Fig. 20: SVM VALIDATION CURVES

B. Dataset 2

Pellentesque efficitur magna pharetra, molestie libero vel, tempus justo. THIS IS WHERE I WILL DISCUSS DATASET 2.

TESTING HERE

VII. Conclusion

Quisque faucibus egestas fermentum. Nulla consequat, tortor sit amet interdum tempus, ante mauris vulputate dui, et bibendum ipsum nisl vitae ante. Pellentesque efficitur magna pharetra, molestie libero vel, tempus justo. Pellentesque auctor eros justo, nec cursus ligula porta tincidunt. Nulla pharetra felis ut felis auctor convallis. Morbi porttitor mi neque, at sollicitudin odio imperdiet ut. Praesent in scelerisque mauris.s.

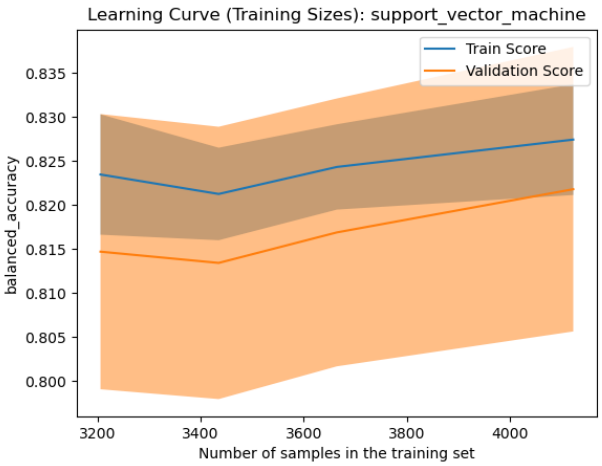
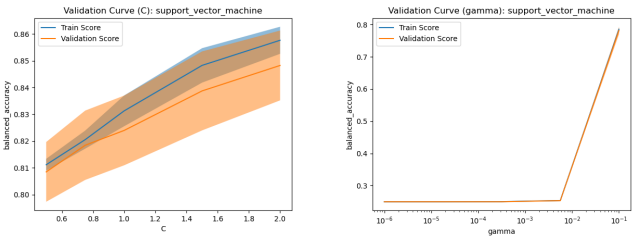


Fig. 21: SVM Training Sizes



(a) SVM C (b) SVM Gamma

Fig. 22: SVM VALIDATION CURVES