CS 487

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proj1_report.pdf

All classifiers were tested using the Iris dataset and the Wine dataset, which contains 1599 samples with 12 features (https://www.kaggle.com/uciml/red-wine-quality-cortez-et-al-2009)

Perceptron Classifier

-Accuracy

Perceptron has an RMSE of around 4.9 for Iris and 7.4 for Wine averaged from multiple runs, which overall is not very accurate

-Cost

On average, perceptron takes about 0.59 seconds to run on Iris, and 0.61 seconds on Wine.

Overall, the speed is fairly consistent regardless of parameters.

Adaline Classifier

-Accuracy

Adaline has an RMSE of about 4.6 for Iris and 7.2 for Wine averaged.

-Cost

Iris takes about 1.26 seconds and Wine takes about 1.31 seconds.

Overall, the speed is fairly consistent regardless of parameters.

SGD Classifier

-Accuracy

SGD has an RMSE of about 4.2 and Iris has an RMSE of about 7.1 averaged.

-Cost

Iris takes about 1.35 seconds to run and Wine takes about 1.54 seconds

Overall, the speed is fairly consistent regardless of parameters.

Other considerations:

Most datasets had missing data, which makes them more difficult to process. It is also complicated to make the classifiers work for all possible forms of data, which can cause a tradeoff between reliability and robustness.