CSc 44700

Assignment due September 27, 2021

Programming Exercise

- Up to this point we've been looking at only two features at a time. We've done this largely so that we can visualize the decision boundary. With only two features, the decision boundary is a line in the plane defined by the two features.

- The models we've looked at so far (Perceptron, Adaline, and Logistic Regression are applicable to any number of features.

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Programming Exercise

- Using the Iris dataset, focus on the species **Iris-virginica** and **Iris-versicolor**. These two classes are not linearly separable when you use only the two features **petal length** and **sepal length**.

- Train the Adaline learning model using the following
  - All six cases of using two features at a time.
  - All four cases of using three features at a time.
  - The one case of using all features at once.

- Do not use Scikit learn for this assignment. You may, if you want, use the sample code that I've posted to Blackboard as a starting point.

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Programming Exercise

- Summarize your results (i.e., what's the best accuracy you can obtain for each of the 11 cases you considered) in a table.

- Discuss your findings. Does using more dimensions help when trying to classify the data in this dataset?

- Include all of your analysis and discussion in your .ipynb file and submit the file through Blackboard. The name of your file should be

    firstname_lastname_AS02.ipynb

- Do not clear your results after you last run so that I will be able to see your results without rerunning your file.

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Programming Exercise

If you collaborate with anyone on this assignment, be sure to follow the collaboration guidelines in the syllabus.

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