CSc 59929

Assignment due February 20, 2020

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.

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.

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 well be able to see your results without rerunning your file.

Programming Exercise

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