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Machine Learning with Python-From Linear Models to Deep Learning

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5. Algorithm Discussion

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Project due Mar 1, 2023 08:59 -03 Completed

Once you have completed the implementation of the 3 learning algorithms, you should have their implementations. In **main.py** we have included a block of code that you should uncomment to load a 2D dataset from **toy_data.txt**, and trains your models using $T = 10$, $\lambda = 0.2$. **main.py** will call **plot_toy_data** for each of the learning algorithms that you have written. Then, it will call **plot_toy_data** to show the model and boundary.

Plots

6.0/6 points (graded)

In order to verify your plots, please enter the values of θ and θ_0 for all three algorithms.

(For example, if $\theta = (1, 0.5)$, then type **1, 0.5** without the brackets. Make sure your answer is to 4 decimal places.)

For the **perceptron** algorithm:

$\theta =$ ✓ $\theta_0 =$

For the **average perceptron** algorithm:

$\theta =$ ✓ $\theta_0 =$

For the **Pegasos** algorithm:

$\theta =$ ✓ $\theta_0 =$

Submit

You have used 3 of 20 attempts

Convergence

1/1 point (graded)

Since you have implemented three different learning algorithm for linear classifier, it is interesting to see which algorithm would actually converge. Please run it with a larger number of iterations. The algorithm would visually converge. You may also check whether the parameter in your model converges to the first decimal place. Achieving convergence in longer decimal requires longer iterations, but the results should be the same.

DISCUSSION

Topic: Unit 1. Linear Classifiers and Generalizations (2 weeks):Project 1: Automatic Review Analyzer / 5. Algorithm Discussion

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