5. Algorithm Discussion

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

Once you have completed the implementation of the 3 learning algorithms, you should implementations. In **main.py** we have included a block of code that you should uncomm 2D dataset from **toy_data.txt**, and trains your models using $T = 10, \lambda = 0.2$. **main.py** for each of the learning algorithms that you have written. Then, it will call **plot_toy_data** 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 a 4 decimal places.)

For the **perceptron** algorithm:

$\theta =$ 3.9173, 4.1640 ✔ $\theta_0 =$ -8.000

For the **average perceptron** algorithm:

$\theta =$ 3.4782, 3.6110 ✔ $\theta_0 =$ -6.3730

For the **Pegasos** algorithm:

$\theta =$ 0.7346, 0.6300 ✔ $\theta_0 =$ -1.2195

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 i which algorithm would actually converge. Please run it with a larger number of iteration algorithm would visually converge. You may also check whether the parameter in your first decimal place. Achieving convergence in longer decimal requires longer iterations, should be the same.

Discussion

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