Help smitha_kannur ▼

Course

<u>Progress</u>

<u>Dates</u>

Discussion

Resources

☆ Course / Unit 1 Linear Classifiers and Generalizations (2 weeks) / Project 1: Automatic Review Analyzer



Project due Oct 7, 2020 05:29 IST Completed

Once you have completed the implementation of the 3 learning algorithms, you should qualitatively verify your implementations. In **main.py** we have included a block of code that you should uncomment. This code loads a 2D dataset from **toy_data.txt**, and trains your models using $T=10, \lambda=0.2$. **main.py** will compute θ and θ_0 for each of the learning algorithms that you have written. Then, it will call **plot_toy_data** to plot the resulting model and boundary.

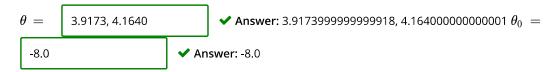
Plots

6.0/6 points (graded)

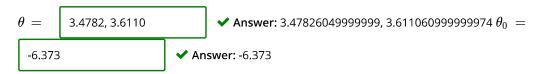
In order to verify your plots, please enter the values of θ and θ_0 for all three algorithms.

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

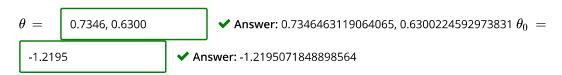
For the **perceptron** algorithm:



For the average perceptron algorithm:



For the **Pegasos** algorithm:



Submit You have used 1 of 20 attempts

• Answers are displayed within the problem

Convergence

1/1 point (graded)

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

Which of the following algorithm will converge on this dataset? (Choose all that apply.)

perceptron algorithm	
✓ average perceptron algorithm	



Solution:

- Perceptron algorithm will not converge if the data is not linear separable.
- Average perceptron algorithm is stable due to averaging repeated solutions of perceptron outputs.
- Pegasos algorithm can find the optimal decision boundary for hinge loss.

Submit

You have used 1 of 3 attempts

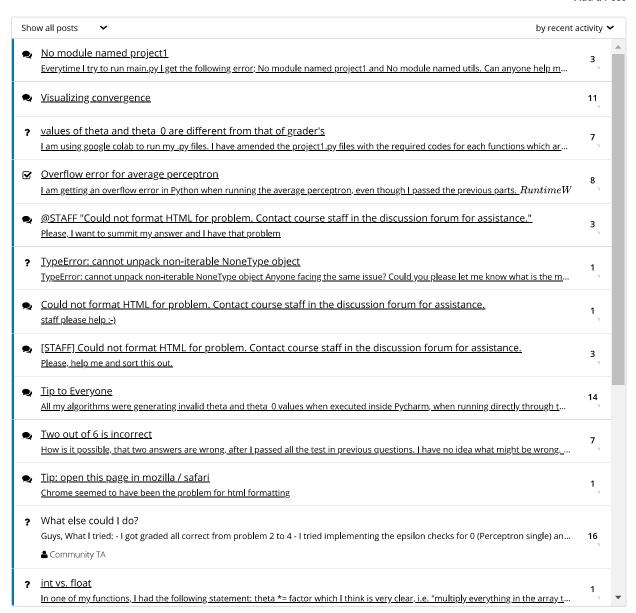
1 Answers are displayed within the problem

Discussion

Hide Discussion

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

Add a Post



< Previous

Next >

© All Rights Reserved



edX

About

<u>Affiliates</u>

edX for Business

Open edX

Careers

News

Legal

Terms of Service & Honor Code

Privacy Policy

Accessibility Policy

Trademark Policy

<u>Sitemap</u>

Connect

<u>Blog</u>

Contact Us

Help Center

Media Kit

Donate















 $\ensuremath{\texttt{©}}$ 2020 edX Inc. All rights reserved.

深圳市恒宇博科技有限公司 <u>粤ICP备17044299号-2</u>