TASK 1B

Regression (graded)

You are in the group Deepforgetting consisting of junterhol (junterhol@student.ethz.ch (mailto://junterhol@student.ethz.ch)), merklec (merklec@student.ethz.ch (mailto://merklec@student.ethz.ch)) and ribadov (ribadov@student.ethz.ch (mailto://ribadov@student.ethz.ch)).

1. READ THE TASK DESCRIPTION

2. SUBMIT SOLUTIONS

3. HAND IN FINAL SOLUTION

3. HANDIN CLOSED ON THURSDAY 28 MAR 2024 00:02

HOW TO OBTAIN POINTS

To obtain points for this task, you have to **individually** hand in the task as follows:

- You need to select one of your group's submissions for grading. You will only be graded on that submissions.
- You have to write a short report on the approach that you have used. **Each student has to individually write their own report and you are not allowed to share the report with your other group members.**

If you do not properly hand in the task, you will receive zero points for the task.

Please double check that your handin was successful by refreshing the page after pressing the hand in button!

CURRENT STATUS

✔ You have successfully handed in the task and it will be graded.

Submission selected for grading

results_22.csv (SGD with 250 iter., 0.08 learning rate, 8=batch) with public score 2.0513572

Report

After using different approaches (first 'numpy.linalg.lstsq()', then normal equation method), we found stochastic gradient descend more suitable to solve for larger datasets.

We correctly transformed X according to the given definition with all the features. We iterate over the dataset for a fixed number of iterations, randomly sampling mini-batches of data in each iteration. For each mini-batch, we compute the gradient of the mean squared error with respect to the parameters 'w' and update the parameters using the gradient descent rule.

We tried a lot of different configurations by changing the amount of iterations, learning rate and the batch size. In the end, we found our best result with 250 iterations, 0.08 learning rate and a batch size of 8. Our second best configuration had the same iterations, a learning rate of 0.02 and a batch size of 16. Our third best configuration had also the same iterations, a learning rate of 0.08 and a batch size of 16.

Preliminary grade

✔ Your submission is better than the baseline. Congratulations, you have passed the task. Your task grade: 6.

Note that the grade is preliminary. We will further assess your submission. In a few cases, we may change the grade for this task throughout the semester.

Grading details

Test set	Your submission's score	Baseline score	Pass
Public	2.0513572370040354	2.0738529008471915	True
Private	1.914877791319853	1.9567805539873961	True

NEW REPORT

Handin has closed on Thursday 28 Mar 2024 00:02. We cannot accept late handins.