ED5340:Data Science: Theory and practice

LAB 9: Gradient Descent Method

✔ Done

Opened: Wednesday, 20 March 2024, 3:00 PM
Due: Wednesday, 20 March 2024, 11:59 PM

1. For the question in last week's lab, is the search direction a gradient descent one? Comment on that.

2.Using steepest gradient descent, find all the local minima for the function $J(x_1, x_2) = (x_1^2 + x_2 - 11)^2 + (x_1 + x_2^2 - 7)^2$. While applying gradient descent, do the following (a) Fixing the value for alpha (b) use line search to determine the value for alpha. Plot the intermediate steps in the iteration to show one of the minimal point.

IMP NOTE: Plan your coding in such a way so that you can reuse them (use classes / functions). For example, code developed last week can be used to solve part of problem 2. Similarly, when you do the problems in ML, both multivariable and single variable optimization play greater role. You can use most of the code that you write today to do the problems in the coming weeks.

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Submission status

Submission status	Submitted for grading
Grading status	Graded
Time remaining	Assignment was submitted 40 mins 13 secs early
Last modified	Wednesday, 20 March 2024, 11:18 PM
File submissions	AM23M022_LAB9_20_03_2024.py 20 March 2024, 11:18 PM AM23M022_LAB9.pdf 20 March 2024, 10:43 PM
Submission comments	▸ Comments (0)

Feedback

Grade	10.00 / 10.00
Graded on	Saturday, 1 June 2024, 2:55 AM
Graded by	eM ed19b017 M JASWANTH KUMAR

◄ On Linear Regression

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