ED5340:Data Science: Theory and practice

LAB 8: Multi Variable Optimization

✔ Done

Opened: Wednesday, 13 March 2024, 1:30 PM
Due: Wednesday, 13 March 2024, 9:00 PM

1 . For the function J(w) = w^2 + (54/w), implement the following methods: (a) Use the bracketed value (that you got in the last lab) to get to the critical point employing interval halving method and (b) identify the critical point using Newton-Raphson method and (c) verify the result manually using the optimality criteria (post this write-up as well in .jpg/.png etc).

2. Plot the surface J(w1, w2) = (w1 - 10)^2 + (w2 - 10)^2. Also, generated the corresponding contour plot. Label the plots appropriately. Give a suitable title for the figure.

3. Using line (unidirectional) search, for the function (w1 - 10)^2 + (w2 - 10)^2, find the minimum value along the direction (2, 5). You can assume the start point to be (2,1). Plot the function and its contours along with the minimum value in that direction.

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Submission status

Submission status	Submitted for grading
Grading status	Graded
Time remaining	Assignment was submitted 21 mins 34 secs late
Last modified	Wednesday, 13 March 2024, 9:21 PM
File submissions	AM23M022_LAB8_13_03_2024.pdf 13 March 2024, 9:21 PM AM23M022_LAB8.py 13 March 2024, 8:45 PM
Submission comments	Comments (0)

Feedback

Grade	10.00 / 10.00
Graded on	Saturday, 1 June 2024, 2:51 AM
Graded by	eM ed19b017 M JASWANTH KUMAR

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