AI Assignment - 2 198414045

Find the global mini point & value for the function $f(x) = x^4 + 3x^2 + 10$.

A: step 1: initialization

x=1, epoch=2, n=0-1

iteration 1:

 $\frac{\partial f}{\partial x} = 4x^3 + 6x = 10$

 $\Delta x = -\eta \frac{\partial f}{\partial x} = -(0.1)(10) = -1$

X = X+AX = 1-1=0

iteration 2:

 $\frac{\partial f}{\partial x} = 4x^3 + 6x = 0$

 $\Delta x = -\eta \frac{\partial f}{\partial x} = -(0.1)(0) = 0$

x= x+ 1x = 0+0=0

Now, the global min. point is x=0.

min. value of the function is f(0)=0+0+10

82-140x- 8000 - 1000 - 1000

ES:1 - 8 31-0 + 81-1 = RA+R - RA

44.000 (418) (418)

=10