Introduction to Machine Learning

Homework 5: Gradient Calculations and Nonlinear Optimization

**[AUTHOR]**

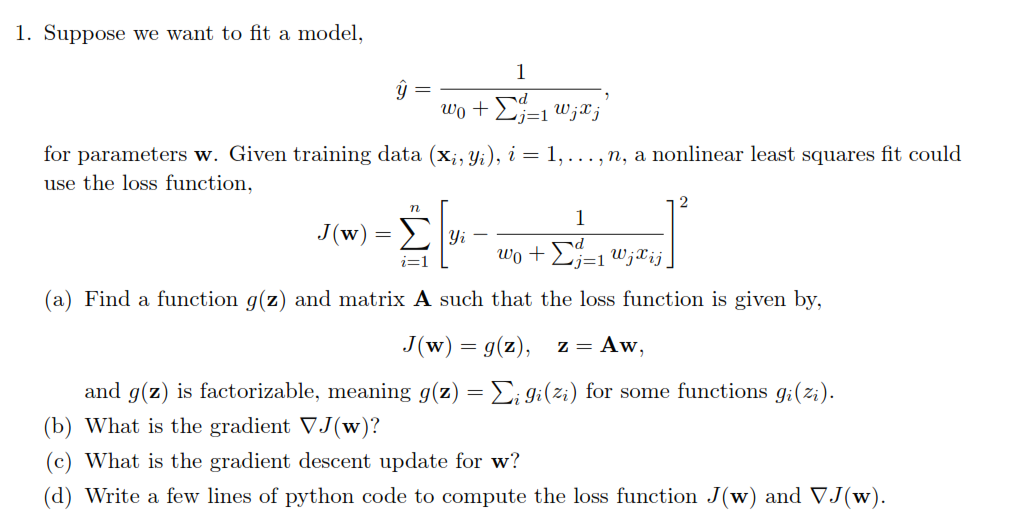
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**[Solution]**

1.



(a) g(**z**)= =

**A**=[ [ A11, A12, ….,A1d ]

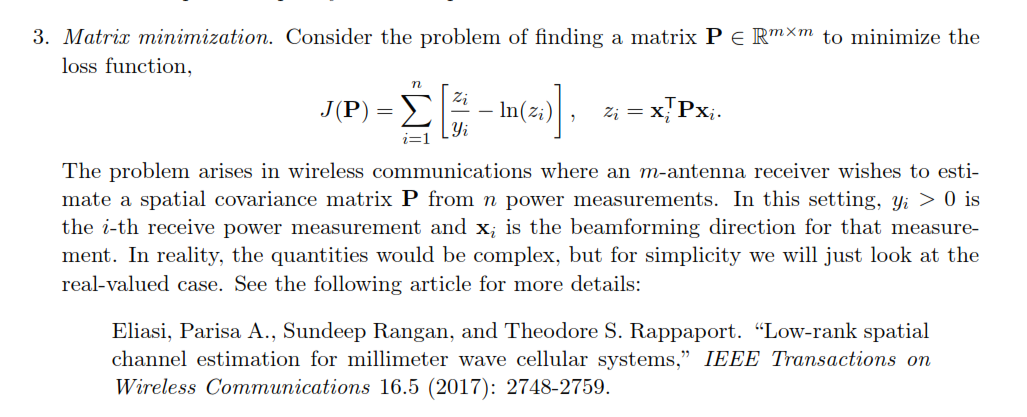
… … … …

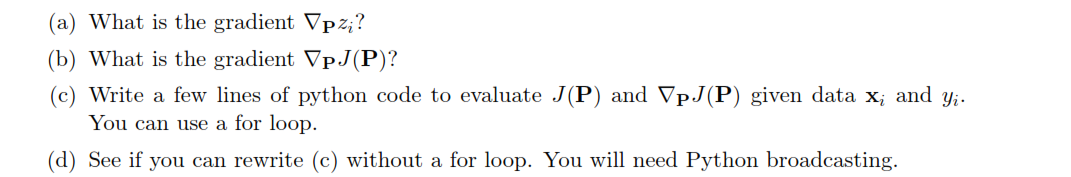
[ An1, An2, ….,And ] ]

(b) at least 36 (=26 + 10) classes: a-z 0-9

Predictors: location of the stylus

3.

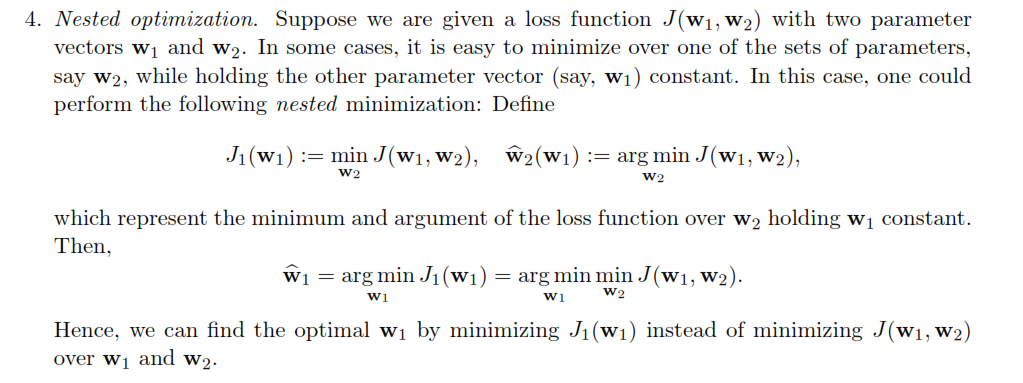


(a) 

(b) z = 0.338 2.815

(c) sample **x0 = [ 30 , 0]**

(d) Not.

4.

(b) 