PGP in AI/ML

Regression - Assignment 1

Submission Date: 2359hrs on 13-11-2019

Total Marks: 12

1. The following questions are to enhance your understanding of basic concepts and definitions. You are expected to answer these questions on your own without referring to internet. [6 Marks]

    a. State any four business applications of machine learning. (2 Marks)
    b. Explain the difference between supervised learning and unsupervised learning with example. (1 Mark)
    c. Provide differences between classification and regression problems. Give an example each of where classification and regression models could be used. (2 Marks)
    d. Explain the difference between linear and polynomial regression. (1 Mark)

2. Solve the following matrix using simultaneous equations in python [2 Marks]:

$$6x+2y-5z=13$$

$$3x+3y-2z=13$$

$$7x+5y-3z=26$$

3. The following dataset of size **n** = 51 provides state-wise female birthrate in the United States for 2002. The variables are **y** = birth rate/1000 females (for 15 to 17 years old) and **x** = poverty rate, which is the percent of the state's population living in households with incomes below the federally defined poverty level.

Q3Dataset.txt

Find the intercept, coefficient value and error term for this regression problem. How would you convey these numbers in a business context? [2+2 Marks]

Submissions:

Solutions or answers to all questions (excepting programming problems) should be submitted in a word document named 'Roll_No.doc' (Roll_No is your identity number of this programme).

All python code should be submitted in a Jupyter notebook named "Roll_No.ipynb".