Fall 2022: CS5710 – Machine Learning

Assignment-3

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GIT-HUB LINK: https://github.com/Shiva6986/ML-Assignment-3

VIDEO LINK:

Description:

Question 1:

1. Using NumPy create random vector of size 15 having only Integers in the range 1-20.

import numpy as np\n",

"x = np.random.randint(1,20, size = 15)\n",

"print (x)"

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1)Reshape the array to 3 by 5

It has been done and got the final output

# 1. Reshape the array to 3 by 5\n",

"y=x .reshape(3,5)\n",

"print(y)\n"

2) Print array shape

print(\"array is :\",y)\n",

"print (\"array shape is:\",y. shape)\n"

Output: array shape is: (3,5)

3) Replace the max in each row by 0

New a = np.where(y == [\n",

" [i]\n",

" for i in np. amax(y, axis = 1)\n",

"], 0, y)\n",

"\n",

"print(new\_a)"

The output is arrived

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

Created 2-dimensional array of size 4x3 which is composed of 4-byte integer elements and also printed the shape, type and data type of the array.

1. In this we wrote a program to compute the eigenvalues and right eigenvectors of the given square array.
2. Computed the sum of the diagonal element of the array which is given and got the output as shown in the image.
3. In this we have written a numPy program and created a new shape to an array without changing its data.

Graphical user interface, text, application, email

Description automatically generated

2) matplotlib

1. In this we wrote a python program to create a below chart of the popularity of programming languages.

2. sample data:

Languages: java, python, php, javascript, c#, c++

Popularity: 22.2,17.6,8.8,7.7,6.7

We have exploded the 1st slice and ploted pie

Its axis is equal and shown.

Graphical user interface, chart, pie chart

Description automatically generated