**Git Hub Link:** [**https://github.com/Upender12/Assignment4\_Neural**](https://github.com/Upender12/Assignment4_Neural)

**Spring 2024: CS5720**

**Neural Networks & Deep Learning - ICP-4**

**Name: Upender Reddy Bokka**

**#700: 700746118**

1. Data Manipulation

a. Read the provided CSV file ‘data.csv’.

b. <https://drive.google.com/drive/folders/1h8C3mLsso-R-sIOLsvoYwPLzy2fJ4IOF?usp=sharing>

A screenshot of a computer

Description automatically generated

c. Show the basic statistical description about the data.

A screenshot of a computer

Description automatically generated

d. Check if the data has null values. i. Replace the null values with the mean

A screenshot of a computer

Description automatically generated

e. Select at least two columns and aggregate the data using: min, max, count, mean. A screenshot of a calculator

Description automatically generated A screenshot of a calories table

Description automatically generated

A screenshot of a computer

Description automatically generated

f. Filter the dataframe to select the rows with calories values between 500 and 1000. A screenshot of a calories chart

Description automatically generated

g. Filter the dataframe to select the rows with calories values > 500 and pulse < 100.

A screenshot of a computer

Description automatically generated

h. Create a new “df\_modified” dataframe that contains all the columns from df except for “Maxpulse”.

A screenshot of a computer

Description automatically generated

1. Delete the “Maxpulse” column from the main df dataframe

A screenshot of a computer

Description automatically generated

j. Convert the datatype of Calories column to int datatype. A screenshot of a computer

Description automatically generated

k. Using pandas create a scatter plot for the two columns (Duration and Calories). Example

A graph showing the difference between a certain type of data

Description automatically generated with medium confidence**A screen shot of a graph

Description automatically generated**

2. Linear Regression

a) Import the given “Salary\_Data.csv”

A screenshot of a computer

Description automatically generated

b) Split the data in train\_test partitions, such that 1/3 of the data is reserved as test subset.

A computer code with black and purple text

Description automatically generated

c) Train and predict the model.

A screenshot of a computer code

Description automatically generated

d) Calculate the mean\_squared error

A screenshot of a computer code

Description automatically generated

e) Visualize both train and test data using scatter plot.

A graph with red dots

Description automatically generated

**A graph with red dots and numbers

Description automatically generated**