Project – 4 – Predicting Heart diseases using various Models

Overview:

For this Analysis we got our data from "https://www.kaggle.com/datasets/alphiree/cardiovascular-diseases-risk-prediction-dataset"

Explain the purpose of this analysis.

We have 5 people in our group wanted to analyze the relationship between Heart Disease with other diseases. We three people wanted to predict Heart_Disease with different models. I have chosen Neural Network Model.

Results:

- **Data Preprocessing**

○ Heart Disease is the target for my model.

○ All other variables are the features for your model.

○ After defining the correlation matrix, I have decided to remove the column 'FriedPotato_Consumption'

Target[**Heart_Disease**] column was taken where the values are 0 and 1 by pd.replace() method. Then converted all Categorical value to numeric using pd.replace().

- **Compiling, Training, and Evaluating the Model**

To define the model I have chosen 2 hidden Layers with 80,30 neurons and the activation Layer is "relu" for both layers.

○ In this model I have achieved accuracy : 91.83% and the loss is 0.2223.

○ What steps did you take in your attempts to increase model performance?

Added Three layers and the hidden nodes were determined by number of features.

For Optimization:

Step: 1

- Add more neurons to a hidden layer.(Add more neurons for both layers)
- Add more hidden layers.

○ After adding hidden layers and neurons I have achieved accuracy : 91.94% and the loss is 0.2243. Slight increase in the accuracy.

Step :2

- Used different activation functions for the hidden layers.
- Reduce the number of epochs to the training regimen.

After adding hidden layers and neurons I have achieved accuracy : 92.02% and the loss is 0.2223. Slight increase in the accuracy.