Assignment for Logistic Regression

Module: Machine Learning

Title: *Heart Attack Prediction*

About The Dataset:

This Dataset is about Heart attack Prediction having shape 303 rows and 14 columns.

- Age is the age of candidate.

- Sex has male and female.

- (cp) Chest Pain the types of angina that are described in the research paper. The higher the number, the lesser are the odds of heart attack.

- (trestbps) Resting blood pressure is normal pressure with no exercise.

- (chol) Cholesterol means the blockage for blood supply in the blood vessels.

- (fbs) fasting blood sugar > 120 mg/dl blood sugar taken after a long gap between a meal and the test. Typically, it's taken before any meal in the morning.

- (restecg) Rest ECG results means ECG values taken while person is on rest which means no exercise and normal functioning of heart is happening.

- (thalach) The Maximum Heart Rate achieved.

- (exang): exercise induced angina is chest pain while exercising or doing any physical activity.

- (oldpeak) ST Depression is the difference between value of ECG at rest and after exercise.

- (slope): the slope of the peak exercise ST segment

- (ca): The number of major blood vessels (0-3) supplying blood to heart blocked.

- (thal): The Types of thalassemia (0 = normal; 1 = fixed defect; 2 = reversible defect)

- (target) (predicted attribute): diagnosis of heart disease (angiographic disease status) — Value 0: < 50% diameter narrowing — Value 1: > 50% diameter narrowing

You have to solve the below given challenges.

1. Follow the given Notebook and solve each question.

2. You have to deal with the Categorical Features.

3. You have to perform the Model fit using Logistic Regression (Sklearn)

4. Kindly find the best threshold probability using with log loss

5. Use the Performance Metrics and Write the Observations for every Metric

- Confusion Matrix
  - Precision
  - Recall
  - Specificity
  - Sensitivity
  - Accuracy
  - F1-score
  - True Positive Rate
  - False Positive Rate
- Classification Report
- ROC_AUC Curve
- Cohen Kappa Score

6. At last give the Interpretations about what you done for the given challenges.

 Note: All the Best.

    Any Queries Join the Mentoring Session 2:00 pm to 6:00 pm