أكاديمية سدايا
SDAIA Academy

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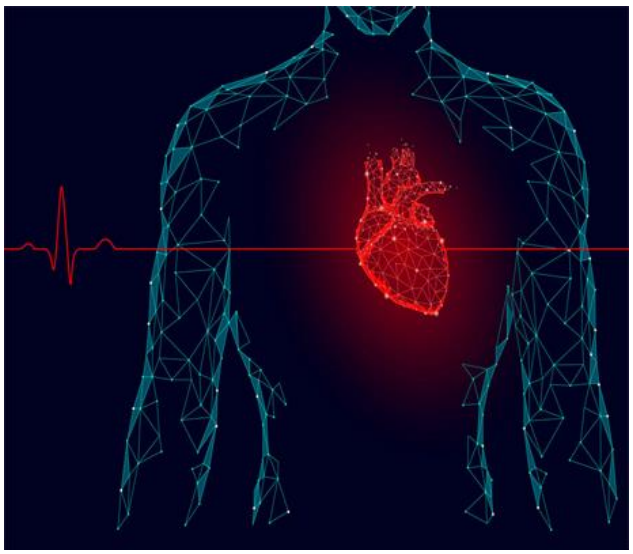
Project Proposal

Predicting Heart Attack



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Introduction

According to studies presented at the 26th Annual Conference of the Saudi Heart Association (SHA), one in every four adults in Saudi Arabia will have a heart attack during the next ten years [1]. There are many factors that affect the high rate of people at risk of heart attacks lead to become a social phenomenon, including eating an unhealthy diet, low physical activity, smoking, stress, and history of coronary heart disease … etc. In this project we will predict and classify hart attacks using KNN and logistic regression models to reduce the number of individuals might vulnerable to this disease.

Dataset

I am using an open source data set[2] detailing various elements of patients' medical records in order to predict whether or not they will be diagnosed with coronary artery disease. My goal is to find a model that accurately predicts heart attacks for both men and women so that I can compare the weight of features in both models.

Variables	Discretion
age	Age of the patient
Sex	Sex of the patient
exang:	exercise induced angina (1 = yes; 0 = no)
ca	number of major vessels (0-3)
cp	Chest Pain type chest pain type Value 1: typical angina Value 2: atypical angina Value 3: non-anginal pain Value 4: asymptomatic
trtbps	resting blood pressure (in mm Hg)
chol	cholesterol in mg/dl fetched via BMI sensor
fbs	fasting blood sugar > 120 mg/dl) (1 = true; 0 = false)
rest_ecg	resting electrocardiographic results Value 0: normal Value 1: having ST-T wave abnormality (T wave inversions and/or ST elevation or depression of > 0.05 mV) Value 2: showing probable or definite left ventricular hypertrophy by Estes' criteria
thalachh	maximum heart rate achieved
target	0= less chance of heart attack 1= more chance of heart attack

Tools

- KNN
- Logistic Regression
- Seaborn
- Matplotlib
- Panda
- Numpy

Conclusion

By the end of this project, we will be able to predict heart attacks based on parietin's heath conditions for early intervention and also to reduce the number of Saudi citizens are might venerable to affect with this disease and to spread awareness within the community.

References

[1] Nadira A, Al Baghli, et al. "Awareness of cardiovascular disease in eastern Saudi Arabia." (2010): 15-21.

[2] https://www.kaggle.com/saijyotitripathy/analysis-and-prediction-using-logistic-regression/data?select=heart.csv