

CMSE 830 Mid-Term Project

Heart Disease Analysis

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AIM OF THE PROJECT:

To analyse the various health parameters which can lead to heart failure and other heart conditions like high blood pressure, high blood sugar levels before fasting.

WHY THIS DATASET?

Heart diseases are one of the leading causes of death throughout the world. The heart dataset is very exhaustive and there are a lot of attributes from which we can make analysis. While performing EDA and visualizations, we can identify a lot of factors which are primarily responsible for heart diseases. Moreover, we can make the relations between two different attributes (for e.g., age and fasting blood sugar, chest pain type and cholesterol) and identify the risk of a particular patient.

PROCEDURE:

I took this dataset from Kaggle. At the beginning, I performed EDA and there were no missing data. For visualizations, I used altair to draw all of my plots.

OBSERVATIONS:

There are mainly four observations which I've made regarding this project.

- a) Both males and females have equal chances of heart diseases. But one observation which is unique which I came to know from the visualization is that in the age group of 70-80 for females, the possibility of heart diseases or heart failure is quite low.
- b) It can be inferred that males have usually high cholesterol levels as compared to females. As we can see from this dataset, there are some males whose cholesterol levels have exceeded 400 whereas for females, the maximum is around 350.
- c) Apart from the age group range of 55-65, mostly patients whose data have been analysed have fasting blood sugar level greater than 120mg/dl which significantly increases their chances of heart diseases.

- d) It can be noticed that the maximum heart rate achieved is inversely proportional to the age of the patient. With increasing age, heart rate decreases. It can also be inferred that in terms of heart rate, there are no significant differences between men and women.