1.Heart Disease Prediction using Exploratory Data Analysis

Year:2020

Healthcare industries generate enormous amount of data so called big data that accommodate hidden knowedge of pattern for decision making. In the context, EDA is considered as analysing data that excludes inferences and statistical modelling. Analytics is an essential technique for any profession as it forecast the future and hidden pattern. Data analytics is considered as a cost effective technology in the recent past and it plays an essential role in healthcare which includes new research findings, emergency situations and outbreaks of disease. The use of analytics in healthcare improves care by facilitating preventive care and EDA is a vital step while analysing data. In this paper, the risk factors that causes heart disease is considered and predicted using K-means algorithm and the analysis is carried out using a publicly available data for heart disease. The dataset holds 209 records with 8 attributes such as age, chest pain type, blood pressure, blood glucose level, ECG in rest, heart rate and four types of chest pain. To predict the heart disease, K-means clustering algorithm is used along with data analytics and visualization tool. The paper discusses the pre-processing methods, classifier performances and evaluation metrics. In the result section, the visualized data shows that the prediction is accurate.

2.Predict Heart Disease with Oracle Data Visualization

Year:2022

How strong are our hearts? Can we use data to help prevent heart disease that could lead to heart attacks or strokes? It turns out a simple tool like Oracle Data Visualization combined with our Machine Learning plugin might be the keys to the solution.

Heart Disease (including Coronary Heart Disease, Hypertension, and Stroke) accounts for about 1 of every 3 deaths in the US, or nearly 801,000 deaths in one year, according to the American Heart Association, Cardiovascular disease is the leading global cause of death, accounting for more than 17.3 million deaths per year in 2013, a number that is expected to grow to more than 23.6 million by 2030.

A healthy lifestyle—including good nutrition, exercise, and avoiding smoking—can decrease the chances of developing heart disease. But what if we could see data based on specific markers that could spot trouble ahead and the likelihood of cardiovascular disease? Let's crunch the numbers and find the story.

In honor of Valentine's Day and American Heart Month, we offer this demonstration video showing how Oracle Data Visualization and machine learning algorithms are applied on patient

health data to predict the prospect of heart disease. Multi-classification Machine Learning technique is used in this demonstration. The process shown in the video below can be summarized as follows:

- Get data of patients known to have heart disease. This dataset contains information related to heart diseases like blood sugar, cholesterol and other medical information about the individual
- Create a multi-classification neural net model using that data
- Use that model to predict the heart disease likelihood in other individuals for whom we know their medical history or medical information

3.Heart Disease Prediction using Machine Learning

Year:2022

In this article, we will be closely working with the heart disease prediction and for that, we will be looking into the heart disease dataset from that dataset we will derive various insights that help us know the weightage of each feature and how they are interrelated to each other but this time our sole aim is to detect the probability of person that will be affected by a savior heart problem or not.

The Heart Disease prediction will have the following key takeaways:

1. Data insight: As mentioned here we will be working with the heart disease detection dataset and we will be putting out interesting inferences from the data to derive some meaningful results.
2. EDA: Exploratory data analysis is the key step for getting meaningful results.
3. Feature engineering: After getting the insights from the data we have to alter the features so that they can move forward for the model building phase.
4. Model building: In this phase, we will be building our Machine learning model for heart disease detection.

So let's get started!

4.Using Dash to pilot a predictive model for heart disease

Year:2021

In a previous article a model for predicting heart disease was developed using PyCaret. Now, assume we wish to pilot this model in a clinical setting. The first thing we need is a UI for the model so it can then be deployed. We will also assume that the tool is for screening to recommend follow-up actions and not diagnosis.

For the purposes of illustration in this example, we will focus on the following:

1. Identifying minimum key requirements and how to address them.
2. Sketching out a UI that incorporates key requirements.
3. Creating a working version using Dash.

The application was developed using PyCharm and all materials can be found on my GitHub.

5.Exploration and Analysis of Diabetes through Visual Interactive System

Year:2021

Mosiur Rahman, Md Rafiqul Islam2, Sharmin Akter, Shanjita Akter, Linta Islam, Guandong

Diabetes is a long-term disease characterized by high blood sugar and has risen as a public health problem globally. Exploring and analyzing diabetes data is a timely concern because it may prompt a variety of serious illnesses, including stroke, kidney failure, heart attacks, etc. Several existing pieces of research have revealed that diabetes data, such as systolic blood pressure (SBP), diastolic blood pressure (DBP), weight, height, age, etc., can provide insightful information about patients diabetes states. Diabetes mellitus is a hormonal and metabolic disorder in which the body can not produce enough insulin and increase blood sugar level abnormally high. As a result, diabetes damages the nerves, raising the risk of chronic kidney disease, stroke, heart attack, eyesight loss, and so on [34].

In this section, we review previous studies that inspired examples to develop new technologies and prominently flourished this sector. However, several recent studies focused on visualization

techniques for exploring the field of healthcare analytics. For example, Kwon et al. [26] proposed a visualization system DPVis to explore disease progression patterns and to derive clinical insights. They conducted a design study with clinical scientists, statisticians, and visualization experts to look into chronic disease pathways, namely, type 1 diabetes.

In this study, we used the publicly available data where there were 1564 individuals people with nominal and ordinal variables [31]. From the dataset, we observed that two patients have zero cm of arm circumference, three patients have zero systolic blood pressure, two patients have zero diastolic blood pressure, and two patients have zero kg of weight in this dataset. It is noted that missing or null values are used to indicate zero values.