Literature survey

For

visualizing and predicting heart disease with an interactive dashboard

Title	Author	Year released	concept
Heart Disease Prediction using Exploratory Data Analysis	R.Indrakumari ,T.Poongodi, Soumya Ranjan Jena	2020	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 metnes. In the result section, the visualized data shows that the prediction is accurate
Using Data Visualization to Analyze the Correlation of Heart Disease Triggers and Using Machine Learning to Predict Heart Disease	Xinyu zhang	2021	Regarding the different causes of heart disease, analyzing what causes heart disease has become mainstream nowadays. After an in-depth understanding of data analysis and machine learning-related knowledge, data analysis and data training are carried out on a dataset containing 14 columns of features. First, Python is used to visualize and analyze data. And then train_test_split is used to divide the data into the training set

			and the learning set. At last, three methods including logistic regression, decision tree classifier, and random forest classifier are used to train the data and observe which method gets the best effect. This article mainly uses numpy, matplotlib, pandas, seaborn and scikit-learn libraries in Python language for data analysis and processing.
Big Data Analytics in Heart Attack Prediction	Cheryl Ann Alexander, Lidong Wang	2017	Acute myocardial infarction (heart attack) is one of the deadliest diseases patients face. The key to cardiovascular disease management is to evaluate large scores of datasets, compare and mine for information that can be used to predict, prevent, manage and treat chronic diseases such as heart attacks. Big Data analytics, known in the corporate world for its valuable use in controlling, contrasting and managing large datasets can be applied with much success to the prediction, prevention, management and treatment of cardiovascular disease. Data mining, visualization and Hadoop are technologies or tools of big data in mining the voluminous datasets for information. Per the studies analyzed, Big Data analytics is useful in predicting heart attack, and the technologies used in Big Data are extremely vital to the management and tailoring of treatment for cardiovascular disease. And as the use of Big Data in healthcare increases, more useful personalized medicine will be available to individual patients.
			Medical services provide gigantic information on every day ground having diverse structures like printed ,images,numbers pool and so forth. However, there is absence of devices accessible in healthcare

Heart disease prediction using data mining	Sairam,Santhosh Voruganti	2022	to process this data. Data mining frame works are utilized to extricate information from this data which can be utilized by media proficient individual to figure future procedures. Heart illness is the primary driver of death in the masses. Early recognizing and hazard expectations are essential for patient's medicines and specialists' analysis. Data mining algorithms like Decision trees (J48), Bayesian classifiers, Multilayer preceptor, Simple logistic and Ensemble techniques are utilized to determine the heart ailments. In this work, different data mining classification procedures are analyzed for testing their precision and execution on preparing medicinal informational index. The classification results will be envisioned by various representation procedures like 2D diagrams, pie graphs, and different techniques. The beforehand mentioned calculations are analyzed and assessed based on their exactness, time utilization factor, territory under ROC and so on.
Big data analytics in heart diseases prediction	Ahmed ismail, samir abdlerazek, i. m. el-henawy	2020	The healthcare data can be employed to develop a health prediction system that can improve in heart disease prevention. Big data on health care, including patient records, clinical notes, diagnosis, parents and family past ailments, hospitals, and scan results can aid in the phase of disease identification and prediction. The emerging machine learning method offers an important framework for Forecasting cardiac diseases. An advanced Support Vector Machine (SVM) classifier was used by the program to conduct parameter tuning to improve classification

			accuracy and performance. The proposed work aims to develop a real-time prediction system for health issues based on big medical data processing on the cloud. In the proposed scalable system, the medical parameters are sent to Apache Spark to extract the attributes from the data and to apply the proposed machine learning algorithm aiming to predict the healthcare risks and send them as alerts and recommendations to the users and the healthcare providers as well. The purpose of this paper is to evaluate the impact of applying machine learning algorithms using electronic health records. The proposed work aimed to provide an effective recommendation system using streaming medical data, historical data on the user profile, and knowledge database to provide users with the best recommendations and alerts in real-time according to the sensors measurements. The proposed system of prediction could offer high accuracy in comparison with literature work with the predictability of 90.6 for heart disease. The methodology of this research is applying parameterization for parameters on SVM to make the possibility of prediction is higher using the most effective features
Heart Disease Detection by Using Machine Learning Algorithms and a Real-Time Cardiovascular Health Monitoring System	Nashif, S., Raihan, Md.R., Islam, Md.R. and Imam, M.H.	2018	Cardiovascular diseases are the most common cause of death worldwide over the last few decades in the developed as well as underdeveloped and developing countries. Early detection of cardiac diseases and continuous supervision of clinicians can reduce the mortality rate. However, accurate detection of heart diseases in all cases and consultation of a patient for 24 hours by a doctor is

| | | | not available since it requires more sapience, time and expertise. In this study, a tentative design of a cloud-based heart disease prediction system had been proposed to detect impending heart disease using Machine learning techniques. For the accurate detection of the heart disease, an efficient machine learning technique should be used which had been derived from a distinctive analysis among several machine learning algorithms in a Java Based Open Access Data Mining Platform, WEKA. The proposed algorithm was validated using two widely used open-access database, where 10-fold cross-validation is applied in order to analyze the performance of heart disease detection. An accuracy level of 97.53% accuracy was found from the SVM algorithm along with sensitivity and specificity of 97.50% and 94.94% respectively. Moreover, to monitor the heart disease patient round-the-clock by his/her caretaker/doctor, a real-time patient monitoring system was developed and presented using Arduino, capable of sensing some real-time parameters such as body temperature, blood pressure, humidity, heartbeat. The developed system can transmit the recorded data to a central server which are updated every 10 seconds. As a result, the doctors can visualize the patient's real-time sensor data by using the application and start live video streaming if instant medication is required. Another important feature of the proposed system was that as soon as any real-time parameter of the patient exceeds the threshold, the prescribed doctor is notified at once through GSM technology |

Analysis of Cardiovascular Diseases Data using Tableau Visualization Tool	B. Madhu, N. Chaithra	2022	Cardiovascular Disease (CVD) includes a wide range of conditions that affect the heart and the blood vessel which is the most common and prevalent disease in India, as well as globally. According to WHO, CVD mortalities were estimated to be 17.9 million, which would increase to 24.2 million by 2030. CVDs are diagnosed using transthoracic Echocardiography techniques which can help doctors to diagnose heart and blood vessel diseases & conditions in adults and children. The timely diagnosis of CVDs patients is the most challenging and complicated task for the medical fraternity. This study illustrates the effectiveness of visualization in exposing and conveying the essential facts in a large CVD dataset using Tableau. Data visualization is among the utmost important components of working with various data analytics solutions, which may be useful in supporting diverse tasks in cardiovascular disease, like tracking the geographic distribution of diseases, analyzing disease prevalence, reviewing medical records, predicting outbreaks, and identifying populations at risk. The objective of this study is to describe the demographic patterns of the CVD database using Tableau. It was applied to 12721 records with a sex-wise distribution of echocardiography records found that 7511 (59%) of the reports were for male patients and 5210 (41%) of the reports were for female patients at Cardiology Department, JSS Hospital in the year 2016. This work has provided a first evaluation of the most spread solutions existing in the CVD data visualization landscape. Based on the result we can analyze

			and visualize; men seem to be more susceptible to cardiovascular diseases than women. Above 39 years of age are more prone to the development of cardiovascular diseases and more records are reported in the age group 60-80. The study on the CVD data analysis using Tableau can help in speeding up the process of comprehending large and complex data.
Prediction and Analysis of Heart Disease using SVM Algorithm	Madhura Patil, Rima Jadhav, vishakha Patil, Aditi Bhawar, Mrs. Geeta Chillarges	2019	Heart disease prediction using data mining is one of the most interesting and challenging tasks. The shortage of specialists and high wrongly diagnosed cases has necessitated the need to develop a fast and efficient detection system. According to past system the integration of clinical decision support with computer based patient record can reduce medical errors, can be made more precise and hence enhance patient safety. We are providing a system which can help for prediction ofheart disease by considering risky factor associated with heart disease. Here system applies support vector machine algorithm on historical information/data of patient and it provides features like Age, Sex, Smoking, Overweight, Alcohol Intake, Bad Cholesterol, Blood Pressure and Heart Rate to make prediction of coronary heart disease with higher accuracy is done.They are implementing a system which will help to predict heart disease depending on the patients clinical data related to the factor associated with beart disease. By using medical dataset of the patients such as age, sex, blood pressure, overweight and blood sugar and by appling SVM classifier they can predict that the patients getting a heart disease or not. In addition classification

			accuracy, sensitivity, and specificity of the SVM have been found to be high thus making it a superior alternative for the diagnosis. They are also doing analysis on the data from which they are getting at which age it mostly occur or which region gets influenced by that disease. So precaution can be taken to avoid the death due to the heart disease.
Fitbit(App)	James Park Eric Friedman	Founded on:March 26, 2007 at Delaware, U.S	Fitbit (stylized as fitbit) is an American consumer electronics and fitness company. It produces wireless-enabled wearable technology, physical fitness monitors and activity trackers such as smartwatches, pedometers and monitors for heart rate, quality of sleep and stairs climbed as well as related software.In 2019, Fitbit was the fifth largest wearable technology company in shipments.The first product released was the Fitbit Tracker, which was released in 2009.In 2014, Fitbit began offering activity trackers, along with a website and a mobile app for iOS, Android and Windows 10 Mobile[34] This allows the trackers to sync to devices such as mobile phones via Bluetooth, or to a Bluetooth-equipped computer running Windows or MacOS.[34] Users have the ability to log their food, activities, and weight, to track over time and set daily and weekly goals for themselves for steps, calories burned and consumed, and distance walked.In August 2022, Fitbit announced new smartwatches, the Versa 4, the Inspire 3, and the Sense 2, featuring incremental improvements mainly in fitness tracking features and battery life over the last iterations.The Fitbit Versa 3 allows a user to track their steps and heart rate and monitor

			the oxygen levels in their blood. It also has built-in GPS to track a user's pace and distance when exercising.
Heart Disease Prediction using Machine Learning	Aman Preet Gulati	February 11,2022	In this paper they are closely working with the heart disease prediction and for that, they are looking into the heart disease dataset from that dataset they have derived 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:Data insight,EDA (Exploratory data analysis) Feature engineering,Model building.They did data visualization and data analysis of the target variable, age features, and whatnot along with its univariate analysis and bivariate analysis.They also did a complete feature engineering part in this article which summons all the valid steps needed for further steps i.e.model building.KNN is giving us the accuracy which is 89%.