Introduction:

1.1 Overview

Data Collection:

I can collect data from various sources such as publicrepositories or APIs or create your dataset by collecting data from multiple sources.

Visualizing and analyzing data:

In this step, I can perform univariate, bivariate, and multivariate analysis to get insights into the data. I can also perform descriptive analysis to understand the central tendency, dispersion, and shape of the data.

Data pre-processing:

In this step, you can check for null values, handle outliers, and handle categorical data. I can also split the data into train and test datasets.

Model building:

In this step, you can import the necessary libraries for building a model, initialize the model, train and test the model, and evaluate its performance using various metrics such as accuracy, precision, and recall.I can also save the model for future use.

Application building:

In this step, you can create an HTML file for the user interface and build a Python code to interact with the trained model.I can then deploy the application on a web server or cloud platform.

1.2 Purpose

Liver diseases averts the normal function of the liver. This disease is caused by an assortment of elements

that harm the liver. Diagnosis of liver infection at the preliminary stage is important for better treatment. In today's scenario devices like sensors are used for detection of infections. Accurate classification

techniques are required for automatic identification of disease samples. This disease diagnosis is very

costly and complicated. Therefore, the goal of this work is to evaluate the performance of different Machine

Learning algorithms in order to reduce the high cost of liver disease diagnosis. Early prediction of liver

disease using classification algorithms is an efficacious task that can help the doctors to diagnose the

disease within a short duration of time. In this project we will analyse the parameters of various

classification algorithms and compare their predictive accuracies so as to find out the best classifier for

determining the liver disease. This project compares various classification algorithms such as Random

Forest, Logistic Regression, KNN and ANN Algorithm with an aim to identify the best technique. Based on

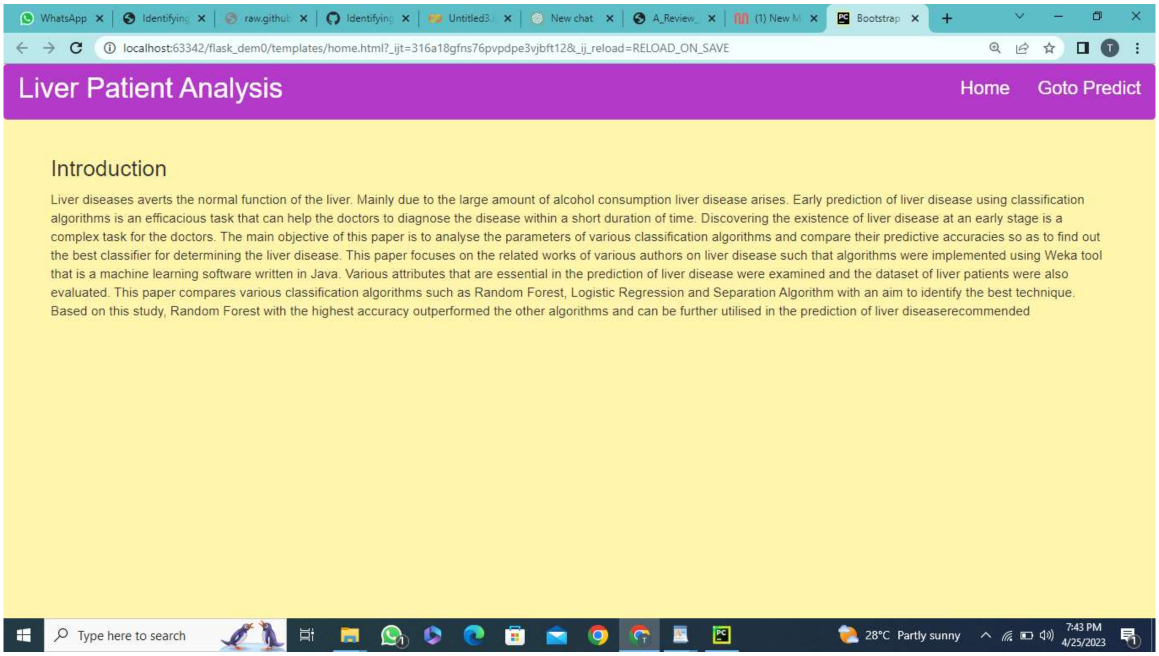
this study, Random Forest with the highest accuracy outperformed the other algorithms and can be further

utilised in the prediction of liver disease and can be recommended to the user

Problem Definition & Design Thinking :

2.1 Empathy Map

Home


localhost:63342/flask_dem0/templates/home.html?_ijt=316a18gfns76pvpdpe3vjbft12&_ij_reload=RELOAD_ON_SAVE
Liver Patient Analysis
Home
Goto Predict
Introduction
Liver diseases averts the normal function of the liver. Mainly due to the large amount of alcohol consumption liver disease arises. Early prediction of liver disease using classification algorithms is an efficacious task that can help the doctors to diagnose the disease within a short duration of time. Discovering the existence of liver disease at an early stage is a complex task for the doctors. The main objective of this paper is to analyse the parameters of various classification algorithms and compare their predictive accuracies so as to find out the best classifier for determining the liver disease. This paper focuses on the related works of various authors on liver disease such that algorithms were implemented using Weka tool that is a machine learning software written in Java. Various attributes that are essential in the prediction of liver disease were examined and the dataset of liver patients were also evaluated. This paper compares various classification algorithms such as Random Forest, Logistic Regression and Separation Algorithm with an aim to identify the best technique. Based on this study, Random Forest with the highest accuracy outperformed the other algorithms and can be further utilised in the prediction of liver diseaserecommended
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28°C Partly sunny
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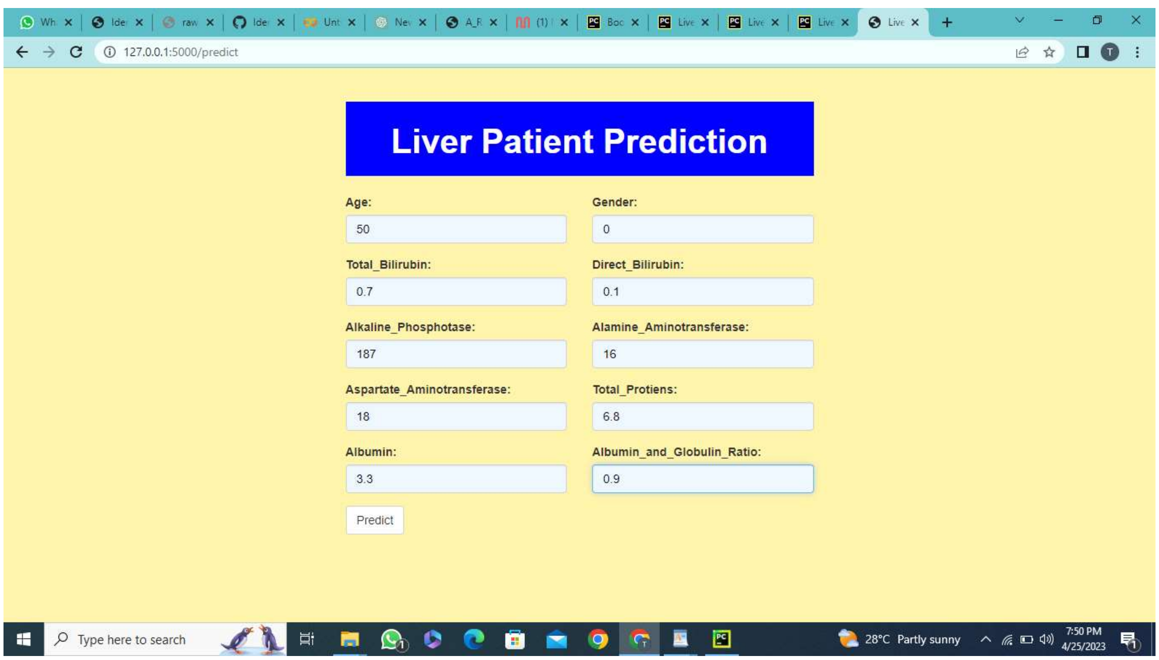
RESULT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Gender:
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Alkaline_Phosphotase:
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Alamine_Aminotransferase:
16
Aspartate_Aminotransferase:
18
Total_Protiens:
6.8
Albumin:
3.3
Albumin_and_Globulin_Ratio:
0.9
Predict
Type here to search
28°C Partly sunny
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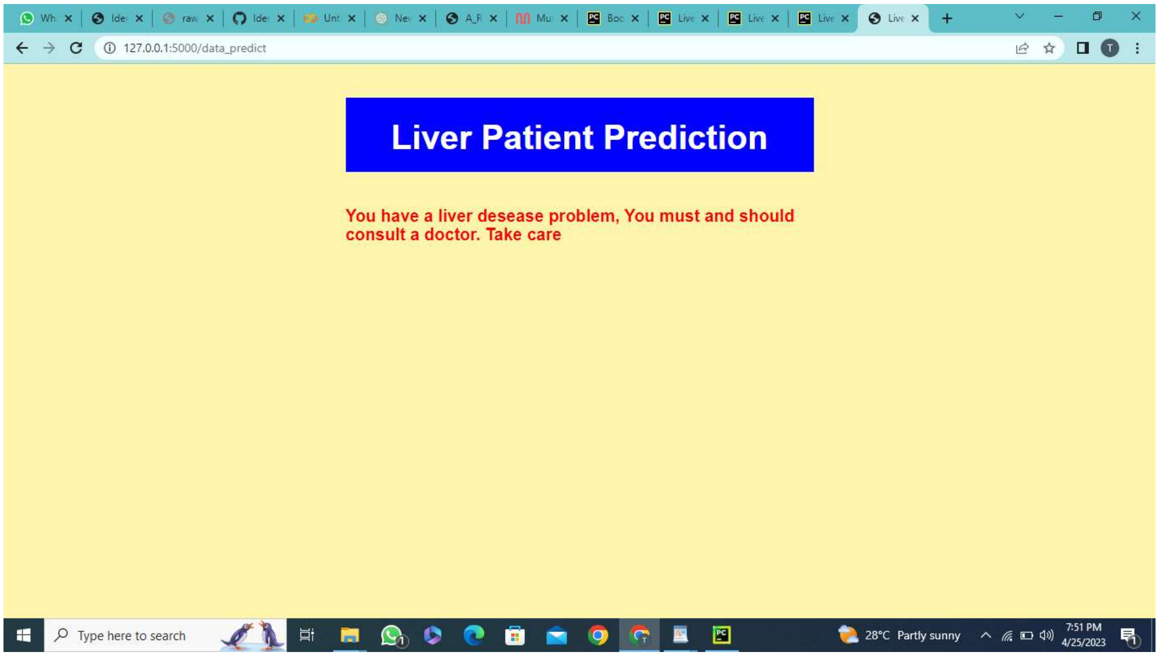
4/25/2023



ADVANTAGES & DISADVANTAGES

Advantages of liver patient analysis:

Early detection: Liver patient analysis helps in the early detection of liver diseases. This can help in the timely treatment and management of liver conditions, which can improve the chances of recovery.

Accurate diagnosis: Liver patient analysis can provide accurate information about the severity of the liver disease, which can help in making informed decisions about treatment options.

Monitoring disease progression: Regular liver patient analysis can help in monitoring the progression of liver diseases, which can help in adjusting the treatment plan accordingly.

Prevention of complications: Liver patient analysis can help in identifying the risk factors that may lead to the development of complications, such as cirrhosis, liver failure, and liver

cancer.

Cost-effective: Early detection and prevention of liver diseases can save significant healthcare costs in the long run.

Disadvantages of liver patient analysis:

Invasiveness: Some liver patient analysis methods, such as liver biopsy, are invasive and carry some risks, such as bleeding, infection, or damage to nearby organs.

Discomfort: Some liver patient analysis procedures can cause discomfort, such as ultrasound-guided liver biopsy or endoscopic retrograde cholangiopancreatography (ERCP).

False-positive results: Liver patient analysis may sometimes produce false-positive results, leading to unnecessary tests and procedures, and causing anxiety and stress.

Limited availability: Some liver patient analysis methods, such as magnetic resonance elastography (MRE), may not be widely available in all healthcare facilities.

Cost: Some liver patient analysis methods can be expensive, making them inaccessible to some patients who cannot afford them.

FUTURE SCOPE :

Precision medicine: Advances in genomics, proteomics, and metabolomics could lead to personalized treatment plans for liver disease patients based on their individualized risk profiles, genetic makeup, and disease progression.

Artificial intelligence: The use of machine learning algorithms and predictive analytics could help in identifying patterns in liver patient data to develop more accurate diagnoses, monitor

disease progression, and predict treatment outcomes.

Non-invasive tests: There is a growing need for non-invasive methods for liver patient analysis, such as blood tests, imaging techniques, and biomarker analysis, to reduce the need for invasive procedures and improve patient comfort.

Telemedicine: With the rise of telemedicine, patients could access liver patient analysis services remotely, enabling them to receive prompt care, even in remote or underserved areas.

Wearable devices: The use of wearable devices, such as smartwatches, could provide continuous monitoring of liver function and disease progression, leading to more timely interventions and improved patient outcomes.

Nanotechnology: The use of nanotechnology in liver patient analysis could enable the development of targeted drug delivery systems, improve imaging accuracy, and enable the early detection of liver cancer.

APPENDIX :