

# **Statistical Machine Learning Approaches to Liver Disease Prediction**

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**Run the App**

**Run the application from anaconda prompt**

- Open new anaconda prompt from the start menu □ Navigate to the folder where your python script is.
- Now type “python app.py” command
- It will show the local host where your app is running on **http://127.0.0.1.8000/**
- Copy that local host URL and open that URL in the browser. It does navigate me to where you can view your web page.
- Enter the values, click on the predict button and see the result/prediction on the web page.

```

app=Flask(__name__) # our flask app

@app.route('/') # rendering the html template
def home():
    return render_template('home.html')

@app.route('/predict') # rendering the html template
def index() :
    return render_template("index.html")

@app.route('/data_predict', methods=['POST']) # route for our prediction
def predict():
    age = request.form['age'] # requesting for age data
    gender = request.form['gender'] # requesting for gender data
    tb = request.form['tb'] # requesting for Total_Bilirubin data
    db = request.form['db'] # requesting for Direct_Bilirubin data
    ap = request.form['ap'] # requesting for Alkaline_Phosphotase data
    aa1 = request.form['aa1'] # requesting for Alamine_Aminotransferase data
    aa2 = request.form['aa2'] # requesting for Aspartate_Aminotransferase data
    tp = request.form['tp'] # requesting for Total_Protiens data
    a = request.form['a'] # requesting for Albumin data
    agr = request.form['agr'] # requesting for Albumin_and_Globulin_Ratio data

    # coverting data into float format
    data = [[float(age), float(gender), float(tb), float(db), float(ap), float(aa1), float(aa2), float(tp),

    # Loading model which we saved
    model = pickle.load(open('liver_analysis.pkl', 'rb'))

    prediction= model.predict(data)[0]
    if (prediction == 1):
        return render_template('noChance.html', prediction='You have a liver desease problem, You must and :
    else:
        return render_template('chance.html', prediction='You dont have a liver desease problem')

if __name__ == '__main__':
    app.run()

```

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```

* Serving Flask app "__main__" (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: off

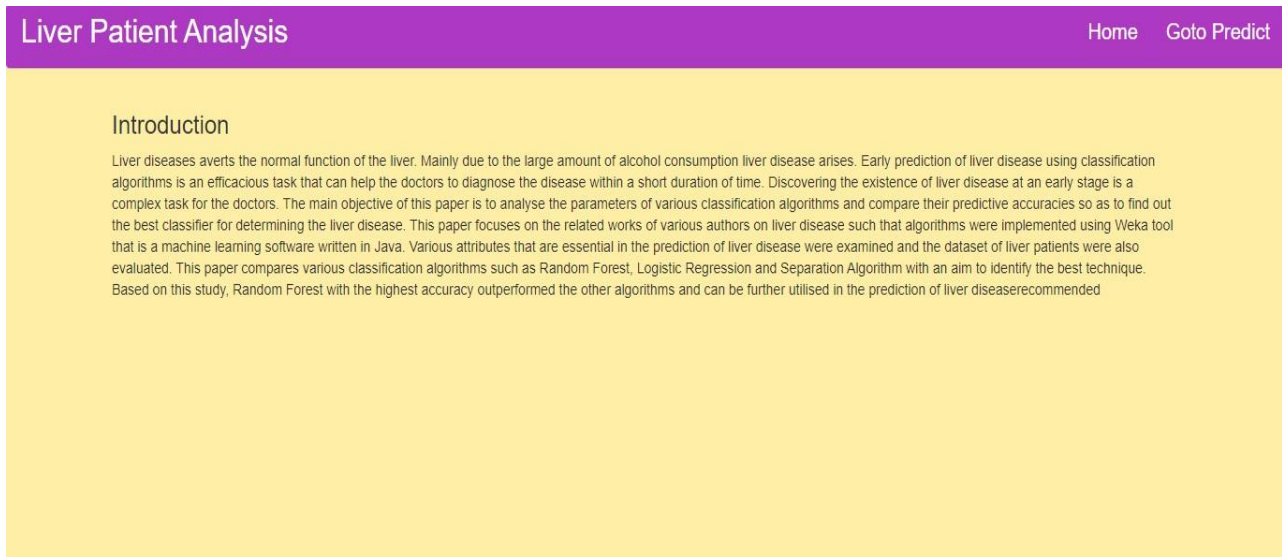
* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)

```

- Showcasing the output on UI

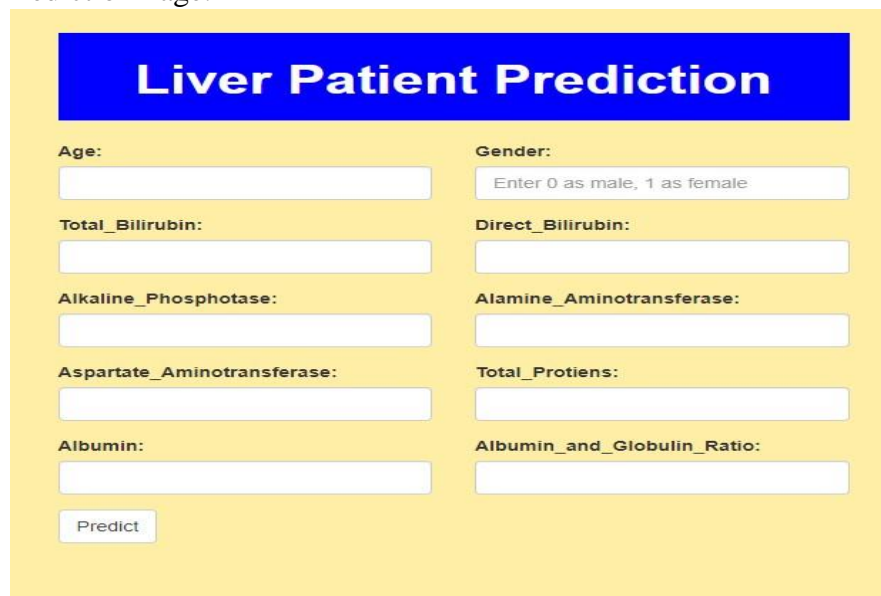
Home page is displayed when home button is clicked. Predict page is displayed when predict button is clicked. In predict page, enter input values to predict the liver disease or not. Finally, the prediction for the given input features is shown.

Home Page:



The screenshot shows the 'Liver Patient Analysis' application interface. It has a purple header bar with the title 'Liver Patient Analysis' on the left and navigation links 'Home' and 'Goto Predict' on the right. The main content area has a yellow background. Under the heading 'Introduction', there is a paragraph of text explaining the purpose of the study: to analyze various classification algorithms (Random Forest, Logistic Regression, Separation Algorithm) to predict liver disease based on input features like age, gender, and bilirubin levels. The text concludes that Random Forest performed best.

Prediction Page:



The screenshot shows the 'Liver Patient Prediction' form. It has a blue header bar with the title 'Liver Patient Prediction'. Below the header, there are two columns of input fields. The left column contains fields for 'Age:', 'Total\_Bilirubin:', 'Alkaline\_Phosphotase:', 'Aspartate\_Aminotransferase:', and 'Albumin:'. The right column contains fields for 'Gender:', 'Direct\_Bilirubin:', 'Alamine\_Aminotransferase:', 'Total\_Protiens:', and 'Albumin\_and\_Globulin\_Ratio:'. The 'Gender:' field has a placeholder text 'Enter 0 as male, 1 as female'. At the bottom left, there is a 'Predict' button.

Output:

## **Liver Patient Prediction**

**You have a liver disease problem, You must and should consult a doctor. Take care**