

# **STATISTICAL MACHINE LEARNING**

## **APPROACHES TO LIVER DISEASE**

### **PREDICTION**

#### **LITERATURE REVIEW:**

The project examines data from liver patients concentrating on relationships between a key list of liver enzymes, proteins, age and gender using them to try and predict the likeliness of liver disease. We are using various machine learning algorithms to find the best accurate model.

#### **PROS:**

**No Medical Expertise Required:** You don't need to have any knowledge of medical science and liver diseases to predict the liver disease using this application. All we need is Medical Reports which would give use the results of our prediction

**High Accuracy:** The system predicts the results with accuracy of 100% for this data set. While the accuracy might vary but it is still trustworthy at a large scale.

**Immediate Results:** The results here are predicted instantaneously thus reducing the time of diagnosis.

**Additional Analytics:** Based on the analytics we can analyse which patients are most likely to suffer from liver disease in the near future and based on the patient details we will make decisions to cure them.

#### **CONS:**

**Scalability:** The Machine Learning Model is yet to be integrated with a Web/Mobile Application, thus limiting the number of users and reducing the accessibility.

**Disease Specific Models:** There isn't a disease-specific model that will help in early predictions of different kinds of liver diseases.

**Limited Diagnosis:** The Final result is binary (whether the patient has 'Risk' or 'No Risk'), thus limiting the scope of diagnosis.

**Lack of Random Forest:** Random forests is a supervised machine learning algorithm that supports both classification and regression asks. It mainly deals with the construction of multiple decision trees. The author has not incorporated Random Forest in the Machine Learning Model.