A Review Of Liver Patient Analysis Methods Using Machine Learning

Define Problem/Problem Understanding

Specify the business problem

Liver diseases avert 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. The project will analysis the parameters of various classification algorithms and compares 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.

The liver is one of the most critical organs of the human body. It plays an essential role in the body's function. Primary purposes include removing toxins from the body, fighting against infections, and balancing the hormones and secretion of bile juice (Devikanniga et al., 2020). If these functions are not performed by the liver correctly, it will result in several complications and liver diseases. Therefore if a virus infects the liver or chemicals that injure the liver are consumed, or the immune system's.

The Liver Project examines the techniques that indicate liver diseases at an acceptable level of accuracy and determines the methods that produce the best accuracy. This project selects a single data set of liver patients with five supervised learning techniques that are applied to that data set in R. The accuracy results from other learning techniques are also used to compare the best algorithm for predicting liver diseases. The stakeholders, including doctors, researchers, lab technicians, or companies dealing with healthcare improvements, can use these results to predict liver diseases at a lower cost and provide better health care in liver treatment.