

**DiabiPred: Prediction of risk of Diabetes in the patients who
use Statin medications to lower the blood cholesterol levels.**

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Abstract

The DiabiPred system is designed and implemented to identify the risk of diabetes in the patients who use Statins medications to lower the blood cholesterol levels. The researches prove that there is a connection between the using of Statins and the risk of the diabetes for some unknown reason, but the risk is important that the FDA has issued warnings on the Statin labels about the Diabetes and the risk associated with it. Therefore, this system has taken that issue as the point of consideration and the model and the project is designed to get informed about the risk of getting diabetes in the patients who use the Statin medications. The statin usage cannot predict the diabetes risk all alone, therefore attributes such as age, weight, height, working status, exercise routine, diet and sex are taken as the attributes irrespective of the statin name, the dosage and the period of taking statins. The machine learning tools are used in the project along with the image processing. The process of the prediction is to input the statin included prescription to the system and the other attributes can be filled by the user. A dataset of 1844 responses is taken in order to train the model for the prediction. The prediction accuracy system is up to 79.4% since the approach was taken with the Random Forest classifier, after testing the model with SVM, KNN, Extra Trees and Bagging Classifier. The application is designed as a mobile application where the data frontend of the mobile application was designed by flutter and dart.

Keywords: Machine learning, diabetes, statins, Random forest, image processing