HY-DIABEMATE: A HYBRID APPROACH OF SUPERVISED LEARNING ALGORITHMS FOR EARLY-STAGE DETECTION OF DIABETES

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Abstract

Predicting diabetes is an important element of healthcare that has received greater attention recently. Diabetes forecasting can aid in early diagnosis, avoid complications, and enhance patient outcomes. This study uses a variety of demographic and clinical variables to create a diabetes predicting model. The model analyses the data and makes predictions about the risk that a patient would acquire diabetes using machine learning methods. The study's findings show that the model is very accurate at predicting diabetes and that it might be a helpful tool for medical professionals to identify people at high risk.

Additionally, the model may be utilized to direct preventative actions and enhance patient outcomes. The dataset used for training the model included various symptoms such as increased thirst, frequent urination, sudden weight loss, genital thrush, blurred vision, and others. To assist people in being more aware of their health status, Hy-Diabemate, a diabetes prediction system utilizing a hybrid technique and user engagement, has been presented.

The primary strategy will involve analysing and projecting Type of Diabetes based on the primary symptoms utilizing the Diabetes prediction model. This method makes it much simpler for anyone to determine if they have Diabetes. On a patient dataset, the proposed hybrid model was evaluated and contrasted with other machine learning models. The outcomes demonstrated that the hybrid model outperformed the separate machine learning models, with the greatest accuracy of 98%. The suggested methodology may help medical practitioners identify and control diabetes earlier, leading to better patient outcomes and lower healthcare expenditures.

Keywords: Machine learning, diabetes, forecasting, symptoms, Hybrid Technique