عنوان مقاله:

A Comparison Study on Machine Learning Methods in Early Diabetes Detection

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خلاصه مقاله:

Diabetes is a chronic metabolic disease that affects many people around the world. Hyperglycemia, or increased blood sugar, is the most common symptom of uncontrolled diabetes and over time leads to serious damage to body systems, especially nerves and blood vessels. Diabetes has a great impact on the organs of the body, including the destruction of the retina and the occurrence of blurred vision and blindness, severe damage to the kidneys, and the need for dialysis are among the complications of diabetes. Therefore, by early diagnosis and predicting the possibility of diabetes, its complications can be prevented. By utilizing various techniques from the field of Machine Learning (ML), it becomes feasible to diagnose diabetes and predict its probability. This paper aims to evaluate the different ML approaches employed by researchers in predicting diabetes, while also introducing the most effective algorithms for different datasets.The result reveal that the combination of the algorithm PCA, Logistic Regression, and K-means with an accuracy of ۹۷.۴۹% is a suitable algorithm for predicting diabetes based on the Pima dataset, also DT (ID۳) +DT(LOSO) algorithm with an accuracy of ۹۹.۹% has the best effect on a clinical dataset.

کلمات کلیدی:

Machine Learning, Diabetes Prediction, PCA, K-means, Logistics Regression

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