عنوان مقاله:

A Machine Learning Approach to Predict Creatine Kinase Test Results

محل انتشار:

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خلاصه مقاله:

Most of the research done in the literature are based on statistical approaches and used for deriving reference limits based on lab results. As more data are available to the researchers, ML methods are more effectively used by the clinicians and practitioners to reduce cost and provide more accurate diagnoses. This study aims to contribute to the medical laboratory processes by providing an automated method in order to predict the lab results accurately by machine learning from the previous test results. All patient data obtained have been anonymized, and a total of ۴۴۹,۴۷۱ test results have been used to build an integrated dataset. A total of ۱۰۷,۶۴۶ unique patients' data has been used. This study aims to predict the value range of the Creatine Kinase tests, which are taken in separate tubes and usually needs more processing time than the other tests do. Using the lab results and the Random Forest Algorithm, this study reports that the outcome of the Creatine Kinase test can be determined with ۹۷% accuracy by using the AST and ALT test values. This is an important achievement for the practitioners and the patients, as this study submits significant reduction in Creating Kinase test evaluation time.

کلمات کلیدی:

Laboratory Tests; Creatine Kinase; Data Mining; Machine Learning; Decision Tree

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