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Preclinical Stage of Building a Machine Learning System for Sepsis Prediction: A Comparative Study of Four Algorithms

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From the point of view of data engineering, the application of machine learning methods in the case of data represented by multivariate multimodal time series is a difficult task, but with a possible practical potential, which is insufficiently explored. From a medical point of view, the conditions described by this type of data are current problems in medicine, especially in anesthesia and intensive care and particularly in case of sepsis. The early diagnosis of life-threatening conditions can lead to increased treatment success, reduced mortality and reduced cost of care for this group of patients, especially in complex cases. This paper describes a research focused on identifying the most appropriate machine learning algorithm to be used for further investigations. It presents some results concerning the preclinical stage in developing of a machine learning system for early sepsis prediction with an anticipated potential of improving the clinical management of patients with sepsis.