

Setting up standards: A methodological proposal for pediatric Triage machine learning model construction based on clinical outcomes

Wolff, Patricio

Ríos, Sebastián A.

Graña, Manuel

© 2019 Elsevier Ltd Triage is a critical process in hospital emergency departments (ED). Specifically, we consider how to achieve fast and accurate patient Triage in the ED of a pediatric hospital. The goal of this paper is to establish methodological best practices for the application of machine learning (ML) to Triage in pediatric ED, providing a comprehensive comparison of the performance of ML techniques over a large dataset. Our work is among the first attempts in this direction. Following very recent works in the literature, we use the clinical outcome of a case as its label for supervised ML model training, instead of the more uncertain labels provided by experts. The experimental dataset contains the records along 3 years of operation of the hospital ED. It consists of 189,718 patients visits to the hospital. The clinical outcome of 9271 cases (4.98%) wa hospital admission, therefore our dataset is highly class imbalanced. Our reported performance comparison results focus on fou