Computer Methods in Biomechanics and Biomedical Engineering, vol.23, no.9, pp.510-517, July, 2020.

Blood transfusion prediction using restricted Boltzmann machines

J. Cifuentes Quintero; Y. Yao; M. Yan; B. Zheng

Abstract-

The availability of blood transfusion has been a recurrent concern for medical institutions and patients. Efficient management of this resource represents an important challenge for many hospitals. Likewise, rapid reaction during transfusion decisions and planning is a critical factor to maximize patient care. This paper proposes a novel strategy for predicting the blood transfusion need, based on available information, by means of Restricted Boltzmann Machines (RBM). By extracting and analyzing high-level features from 4831 patient records, RBM can deal with complex patterns recognition, helping supervised classifiers in the task of automatic identification of blood transfusion requirements. Results show that a successfully classification is obtained (96.85%), based only on available information from the patient records.

Index Terms- Blood transfusion prediction; restricted Boltzmann machines; patterns recognition

Due to copyright restriction we cannot distribute this content on the web. However, clicking on the next link, authors will be able to distribute to you the full version of the paper:
Request full paper to the authors

If you institution has a electronic subscription to Computer Methods in Biomechanics and Biomedical Engineering, you can download the paper from the journal website:
Access to the Journal website

Citation:
Cifuentes, J.; Yao, Y.; Yan, M.; Zheng, B. "Blood transfusion prediction using restricted Boltzmann machines", Computer Methods in Biomechanics and Biomedical Engineering, vol.23, no.9, pp.510-517, July, 2020.