A Novel Tree-based Feature Selection for Diagnosing Bipolar Disorder, a Real-World Scenario

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Abstract

One of the most common causes of mortality worldwide is Bipolar disorder (BD). Patients with this problem have life expectancy lower than normal people. By applying Machine Learning (ML) techniques (Classification) to the indicators, we are able to reduce prognostic uncertainty associated with the subjective characteristics of BD. One important method that has a great effect on the overall outcome of the classification methods is Feature Selection. In this paper, a new method of tree-based feature selection is proposed and tested over a real-world data set of patients' indicators. To make the work as accurate as possible the several well-known classification algorithms are used. The outcome of various performance metrics endorsed the ability of the proposed tree-based feature selection in reducing the classification error related to diagnosing the bipolar disorder.

Keywords:

Bipolar disorder, Classification, Machin Learning, Feature Selection