A Collaborative Evaluation Metrics Approach for Classification Algorithms

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Abstract

Evaluating Algorithms is one of the critical steps which should be strongly considered as this is the pillar of most of the decisions. This research proposes a novel method for accurate algorithmsø"evaluation according to the metricsø" relationships and weight. The weight of the evaluation metrics is determined according to their invariance level. The proposed method validity is confirmed by applying and evaluating the most famous and well-populated classification techniques. The results have been considered according to the calculated weight of the evaluation measures to reveal the final algorithm evaluation. As a case study, the most suitable classification technique for Tinnitus data are explored. This research considered the Tinnitus data as Tinnitus symptoms are not clearly recognized which highlights the difficulty of the patients to have a direct and fast diagnosis which highlighted the motivation in investigating intelligent methods for fast Tinnitus diagnosing. The research applied the experiment on a real dataset that is gathered in Egypt and the results highlighted that the Support Vector Machine classification algorithm is the most suitable technique for Tinnitus data classification with an accuracy equal to 90.1%.