Abstract - Semi-supervised learning is an emerging subfield of machine learning, with a view to building efficient classifiers exploiting a
limited pool of labeled data together with a large pool of unlabeled
ones. Most of the studies regarding semi-supervised learning deal
with classification problems, whose goal is to learn a function that
maps an unlabeled instance into a finite number of classes. In this
paper, a new semi-supervised classification algorithm, which is
based on a voting methodology, is proposed. The term attributed to
this ensemble method is called CST-Voting. Ensemble methods have
been effectively applied in various scientific fields and often
perform better than the individual classifiers from which they are
originated. The efficiency of the proposed algorithm is compared to three familiar
semi-supervised learning methods on a plethora of
standard benchmark datasets using three representative supervised
classifiers as base learners. Experimental results demonstrate the
predominance of the proposed method, outperforming classical
semi-supervised classification algorithms as illustrated from the accuracy
measurements and confirmed by the Friedman Aligned Ranks
nonparametric test.