

I.E. Livieris, E. Pintelas, A. Kanavos and P. Pintelas. [An improved self-labeled algorithm for cancer prediction](#). In *Advances in Experimental Medicine and Biology*, Springer Verlag, 2018.



Abstract - Nowadays, cancer constitutes the second leading cause of death globally. The application of an efficient classification model is considered essential in modern diagnostic medicine in order to assist experts and physicians to make more accurate and early predictions and reduce the rate of mortality. Machine learning techniques are being broadly utilized for the development of intelligent computational systems, exploiting the recent advances in digital technologies and the significant storage capabilities of electronic media. Ensemble learning algorithms and semi-supervised algorithms have been independently developed to build efficient and robust classification models from different perspectives. The former attempt to achieve strong generalization by using multiple learners while the latter attempt to achieve strong generalization by exploiting unlabeled data. In this work, we propose an improved semi-supervised self-labeled algorithm for the cancer prediction, based on ensemble methodologies. Our preliminary numerical experiments illustrate the efficacy and efficiency of the proposed algorithm, proving that reliable and robust prediction models could be developed by the adaptation of ensemble techniques in the semi-supervised learning framework.