Review of: "Harnessing Self-Supervision in Unlabelled Data for Effective World Representation Learning in AI Models"

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This paper presents an essential theme in machine learning, namely the ability of algorithms to learn in the absence of a classification label, known as self-supervision. The introduction provides a comprehensive and easy-to-read review of existing methods. This is followed by proposals that are developed in the methods, along with some results. These show, in particular, that in the case of a weakly supervised network, classification performance can drop sharply as a function of the number of supervision pairs. These results are quite correct, but they are not substantiated by the extensive analysis of the methodology provided in the paper. Firstly, the method is presented in a very succinct mathematical manner and is based on previous work, which undermines the paper's originality. Secondly, the validation of the results is extremely rapid, since it only gives 3 tables with two or three results, whereas we might have expected an extensive quantitative analysis of this kind of self-learning strategy (at what point does performance drop? is it true on other datasets?). In short, the paper is extremely correct, but sorely lacking in support for quantitative simulations, both in terms of the different datasets used and the analysis of the algorithm's meta-parameters.