

COMPARATIVE ADVANTAGE BETWEEN MACHINE LEARNING ALGORITHMS AND EVOLUTIONARY ALGORITHMS IN DISEASE PREDICTION AND CONTROL

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ABSTRACT

Current study shows that Artificial Intelligence (AI) can help realize excellent performance for some specific areas of application in health care technology. Evolutionary Algorithms (EA) and Deep learning are some of the branches of AI, which are efficient for global optimization motivated by the Darwinian theory of biological evolution. Machine learning (ML) algorithms, which could be supervised, unsupervised, semi-supervised or reinforcement, make notable contribution to disease prediction based on certain predictive (supervised) modelling on the basis of disease symptoms. The system processes and analyses these symptoms as input and releases the probable disease as output based on various supervised learning algorithms. The goal of this study is to provide the necessary information about the effectiveness and efficiency of the EA and ML showing their comparative predictive accuracy and timeliness. This was achieved by analyzing collected data on the benefits of learning algorithms over Evolutionary algorithms. This work will not only help researchers and medics to know the contributions of EA and ML algorithms in the healthcare sector but also their perceived strength and weaknesses with respect to prediction and control of a particular ailment or disease.

Keywords: Supervised Machine Learning Algorithm, Symptoms, disease prediction, Artificial intelligence; deep learning; evolutionary algorithms; healthcare.