

## عنوان مقاله:

Speed up and more Quality in Recognition of Heart Disease based on a Learner Machine(Hybrid-Linear) and the Effect of Pareto's Law on the Training Model

## محل انتشار:

اولین کنفرانس رویکردهای نوین مهندسی پزشکی در حوزه بیماری های قلب و عروق (سال: 1393)

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#### خلاصه مقاله:

Diseases had been the greatest threat for human being along the history. Heart diseases (HD) have gained special attention in medical studies. Recently studying about intelligent method such as classification and diagnosis of HD has been continuing as a key topic. Points of view in researches have been done in order to increase precise and reduce error in this kind of decisions. Aim of this paper is to propose a simple hybrid-linear model using logistic regression and single layer perceptron neural network which is using after a special pre-processing, identification of noisy data. And so, based on Pareto's law, the network training with only 20% of the data exist is performed. The model for improving the classification and patterns recognition of HD has been used on clinical data of 270patients from the Cleveland Clinic (UCI website).The model has been implemented in MATLAB. The mean-error of the proposed model on the total dataset was 11/11%, which was achieved a significant improvement compared to recent similar methods. The results clearly show that the linear proposed technique has more effects on reducing the error in the classification of patient more accurately and short-time than conventional methods and complex .(nonlinear. The method can help a doctor for early detection of disease or as a decision support system (DSS

## كلمات كليدى:

Heart diseases diagnosis, Biomedical engineering, Classification, Pattern recognition, Machine learning, Artificial neural network, Single layer perceptron, Logical regression, Pareto's law

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