# RESEARCH ON THE APPLICATION OF GENETIC ALGORITHM COMBINED WITH THE "CLEFT-OVERSTEP" ALGORITHM FOR IMPROVING LEARNING PROCESS OF MLP NEURAL NETWORK WITH SPECIAL ERROR SURFACE.

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## TÓM TẮT:

The success of an artificial neural network depends much on the training phase. Techniques for training neural network based on gradient are partially satisfying and are widely used in practice. However, in several cases which has special error surface similar to a deep cleft, these algorithms seem to work slowly and encounter local extreme values. Authors of this paper propose the use of genetic algorithm in combination with the "cleft-overstep" algorithm to improve the training process of neural network which has special error surface and illustrate this usage through a simple application in text recognition. First, An MLP artificial neural network with cleft-similar error surface is trained using back propagation algorithm and the results are analyzed. Next, the paper describes the usage of the proposed method to improve the training process of neural network on two aspects: correctness and rate of convergence. Implementation is conducted in and results obtained from Matlab environment.