

# An Evolutionary Strategy for Fuzzy Flip-Flop Neural Networks Learning

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## Abstract

This presentation will show the usage of basic Evolutionary Strategy to evolve the architecture and the connection weights for Fuzzy Flip-Flop Neural Networks. Due to the specific transfer function of the neural network and its numerical derivatives, Back Propagation Algorithm can be used for the training process, but it has weak convergence rates. Therefore Evolutionary Strategy as a heuristic algorithm will be applied to Fuzzy Neural Network. It exhibits better results in terms of faster convergence and lower sum squared error. Next in the presentation some numerical results will be exposed. They will concern on natural example like function approximation and data classification. Finally some conclusions and ideas for future work will be under discussion.

**Keywords:** Evolutionary Strategy, Fuzzy Flip-Flop Neural Network, Neural Network Learning Process