

## Three-term fuzzy back-propagation

### Abstract:

The disadvantages of the fuzzy BP learning are its low speed of error convergence and the high possibility of trapping into local minima. In this paper, a fuzzy proportional factor is added to the fuzzy BP's iteration scheme to enhance the convergence speed. The added factor makes the proposed method more dependant on the distance of actual outputs and desired ones. Thus in contrast with the conventional fuzzy BP, when the slop of error function is very close to zero, the algorithm does not necessarily return almost the same weights for the next iteration. According to the simulation's results, the proposed method is superior to the fuzzy BP in terms of generated error.