

Function Approximation Through Growing Neural Network Based On RBF And Potential Functions

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Abstract - This research work proposes a neural network based on RBFs with symmetrical potential functions and two fundamental components - potential function generators (PFG) and potential function entities (PFE). The approach, based on RBFNs with symmetrical potential functions (SPF), performs a mapping based on a set of generated potential fields over the domain of input space by a number of potential function entities. The placement and parameterization of the local units as well as the choice of their number is difficult and critical part for RBFs Networks. Networks with too many parameters can overfit data and have poor generalization. The presented method allows effective determination of all these values automatically. The proposed approach is suitable for on-line and off-line applications.