clusters) is obtained using hierarchical combination than combination of partitional clustering.

Creating Ensemble of Evolutionary Neural Networks by Topology Improvement and Feature Extraction

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Abstract:
Creating neural networks ensembles can significantly improve the generalization ability and accuracy of classification systems. Neuroevolution (NE) has shown good results in complex learning tasks. In traditional NE approaches, a simple fully connected topology is chosen for the evolving networks before the experiment begins. Evolution searches the space of connection weights of this fully connected topology by allowing high-performing networks to reproduce. Thus, the goal of traditional NE is to optimize the connection weights that determine the functionality of a network. However, connection weights are not the only aspect of neural networks that contribute to their behavior. Modifying the network topology has been shown effective as part of supervised training. Besides, automatically determining an appropriate set of inputs for the network, feature selection, is also useful in classification tasks. This paper uses NEAT method which extends the neuroevolution methods by learning the network's input, topology, and weights simultaneously. Then after creating such NN classifiers that are diverse in topology, weights, and set of inputs, we can combine them into one "consensus" ensemble output. Here, different Ensemble methods are discussed and tested. Initial experiments on different datasets have shown great improvement over existing methods.

Bandwidth Provisioning in Differentiated Service Networks Using Learning Automata

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Abstract:
In this paper a method based on learning automata for bandwidth provisioning in differentiated service networks has been proposed. The proposed method tries to maximize the bandwidth providing that the QoS does not go below a predetermined threshold. The bandwidth for each class of service is changed dynamically according to the feed backs received from the environment. Simulation results have shown that comparing to static bandwidth provisioning the proposed method provides better quality of service in terms loss rate. Simulations also have shown that even under varying traffic or pricing conditions the proposed method converges to the optimal policy with an acceptable speed.

SE4: Image Processing (I)

Design and Implementation of a Real-Time Movement an Rotation Tracking of Fingers Algorithm in Virtual Environment for Navigation and Manipulation Purposes Based on two Cameras

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Abstract:
In this Algorithm, index finger and open hand states or opening of any number of fingers are recognized and the 3d movement and rotation of them can be tracked. Contour-based algorithms are one of the fast approaches for gesture tracking. In these algorithms, all of the contour area is traversed and the curvatures with local maximum are determined as finger tips. In this proposed algorithm we improve the speed of contour based algorithms to some extent. In our method only three to fifteen points of the contour area are checked for tips and usually a less part of the contour area is traced. Another problem of contour-based algorithms is to find a specific point to start tracing the area; but in this algorithm a method for determining the longest finger in open hand state with four or five fingers is defined so that the rotation of the hand can not make any problem. In this work, a contrast-based algorithm for automatic thresholding of segmented