

Dong, Wei; Zhao, Yueling; Wang, Jianhui; Gu, Shusheng

New approach to structure optimization of wavelet neural network based on rough sets theory. (English) [Zbl 1102.68546](#)

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Summary: A new approach for constructing and training wavelet network is proposed based on the time-frequency and the rough sets theory. A learning algorithm is presented. The suggested algorithm utilizes the time-frequency information contained in the training data sufficiently, determines the number of the hidden layer nodes and the weights of wavelet network, and solves the wavelet network structure optimization problem. Based on the rough sets theory, a new wavelet network with fewer nodes is constructed during the process. The simulation result shows that the proposed method is simple and effective.

MSC:

68T05 Learning and adaptive systems in artificial intelligence

68T30 Knowledge representation

Keywords:

wavelet frames; wavelet network