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应用聚类和模糊神经网络方法设计模糊规则库

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摘要: 基于聚类技术和模糊神经网络提出一种新的自动生成模糊系统规则库的设计方法. 采用结构辨识和参数辨识相结合的方法, 构造模糊系统完善的模糊规则库. 用此设计方法对函数逼近问题进行仿真, 结果表明该方法具有规则数目少、学习速度快、建模精度高等特点.

关键字: 聚类; 模糊神经网络; 模糊规则库

Clustering and fuzzy neural network for fuzzy rule sets modeling

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Abstract: Based on the clustering arithmetic and fuzzy neural network, a new approach, which is composed of structure identification and parameter identification, is proposed for designing the fuzzy system. In the process of structure identification, a clustering method is used to extract the number of fuzzy rules; in the process of parameter identification, the RBF network is used to obtain more precise parameter of the fuzzy system. Stimulated results of function approximation problems show that the proposed method can provide optimal model structure and parameters for fuzzy modeling and possesses high learning efficiency.

Key words: clustering; fuzzy neural network; fuzzy rule sets

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