短文

模糊规则的学习及其在非线性系统建模中的应用

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摘要
探讨用神经网络的学习算法及模糊推理方法为非线性系统建模的问题. 给出了学习模糊规则的新算法. 这个算法首先用竞争学习为训练样本的输入空间进行聚类, 然后为其确定区域划分边界, 并按样本输入区域学习模糊规则. 文中对于模糊规则提出了相应的模糊推理算法. 并用算例验证了本文算法的有效性.

关键词　　模糊系统　竞争学习　非线性系统建模　神经网络

分类号

Learning of Fuzzy Rules and its Application to Nonlinear Systems Modeling

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Abstract
This paper discusses fuzzy inference systems and their application to nonlinear system modeling. The paper presents a new algorithm for learning fuzzy rules. The algorithm first partitions input data into some clusters by competitive learning, then determines the decision margins for each input cluster, and finally, learns the fuzzy rules for each input local region. The paper proposes and adaptive fuzzy inference method for the fuzzy rules. Examples are provided to demonstrate the presented learning algorithm and the computing results show that the method of the paper is superior to those in the reference.

Key words　　Fuzzy systems　competitive learning　nonliear system modeling　neural networks

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