عنوان مقاله:

Data Mining Using Genetic Algorithms and Cellular Learning Automata Based on Factor Analysis and Cluster Analysis

محل انتشار:

اولین کنفرانس بین المللی دستاوردهای نوین پژوهشی در مهندسی برق و کامپیوتر (سال: 1395)

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خلاصه مقاله:

In this study, first different methods to reduce data dimensions and feature selection are analyzed and then a new method for data mining using genetic algorithm, cellular learning automata based on factor analysis and cluster analysis has been used in three stages.In the first stage noise reduction of data using factor analysis is applied to eliminate the computational complexity of data, in the second stage primary feature selection is performed based on genetic algorithms and support vector machine based on cluster analysis to remove features that may increase the error in the classification and identification of the decision making boundary and in the third stage effective feature selection is done by cellular learning automata based on the impact of the extracted patterns that increases the accuracy of data classification by selecting effective features.In order to compare and evaluate the proposed plan a set of general UCI data that is implemented in MATLAB software is compared with other methods that have a special place in which the accuracy of the proposed method (FA-CA-CLA) is higher than the mentioned methods.

کلمات کلیدی:

data mining, cellular learning automata, genetic algorithm, factor analysis, cluster analysis

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