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1. Forecasting stock index price based on M-factors fuzzy time series and particle swarm optimization

March 2014
Pritpal Singh | Bhogeswar Borah

In real time, one observation always relies on several observations. To improve the forecasting accuracy, all these observations can be incorporated in forecasting models. Therefore, in this study,...

2. A comparison of parallel large-scale knowledge acquisition using rough set theory on different MapReduce runtime systems

March 2014
Junbo Zhang | Jian-Syuan Wong | Tianrui Li | Yi Pan

Nowadays, with the volume of data growing at an unprecedented rate, large-scale data mining and knowledge discovery have become a new challenge. Rough set theory for knowledge acquisition has been successfully...

3. Membership function based rough set

January 2014
Mihir K. Chakraborty

In this paper the notion of a kind of clusters of subsets of a set based on rough membership function is introduced. The algebraic structure emerged thereby is studied. A comparison with classical rough...

4. New directions in fuzzy automata

February 2005
Mansoor Doostfatemeh | Stefan C. Kremer

Automata are the prime example of general computational systems over discrete spaces. The incorporation of fuzzy logic into automata theory resulted in fuzzy auotomata which can handle continuous spaces....

5. Evidence-theory-based numerical algorithms of attribute reduction with neighborhood-covering rough sets

March 2014
Degang Chen | Wanlu Li | Xiao Zhang | Sam Kwong

Covering rough sets generalize traditional rough sets by considering coverings of the universe instead of partitions, and neighborhood-covering rough sets have been demonstrated to be a reasonable selection...

6. Hesitant fuzzy information aggregation in decision making

March 2011
Meimei Xia | Zeshui Xu

As a generalization of fuzzy set, hesitant fuzzy set is a very useful tool in situations where there are some difficulties in determining the membership of an element to a set caused by a doubt between...

7. On multi-granulation covering rough sets

Available online 21 January 2014
Caihui Liu | Duoqian Miao | Jin Qian

Recently, much attention has been given to multi-granulation rough sets (MGRS) and different kinds of multi-granulation rough set models have been developed from various viewpoints. In this paper, we...

8. Bayesian network approach to multinomial parameter learning using data and expert judgments

July 2014
Yun Zhou | Norman Fenton | Martin Neil

One of the hardest challenges in building a realistic Bayesian Network (BN) model is to construct the node probability tables (NPTs). Even with a fixed predefined model structure and very large amounts...

9. Multigranulation decision-theoretic rough sets

January 2014
Yuhua Qian | Hu Zhang | Yanli Sang | Jiye Liang

The Bayesian decision-theoretic rough sets propose a framework for studying rough set approximations using probabilistic theory, which can interprete the parameters from existing forms of probabilistic...

10. Decision making in the TBM: the necessity of the pignistic transformation

February 2005
Philippe Smets

In the transferable belief model (TBM), pignistic probabilities are used for decision making. The nature of the pignistic transformation is justified by a linearity requirement. We justify the origin...

11. Probability, fuzziness and borderline cases

July 2014
Jonathan Lawry

An integrated approach to truth-gaps and epistemic uncertainty is described, based on probability distributions defined over a set of three-valued truth models. This combines the explicit representation...

12. Set-based granular computing: A lattice model

March 2014
Yuhua Qian | Hu Zhang | Feijiang Li | Qinghua Hu | Jiye Liang

Set-based granular computing plays an important role in human reasoning and problem solving. Its three key issues constitute information granulation, information granularity and granular operation....

13. Dynamic intuitionistic fuzzy multi-attribute decision making

April 2008
Zeshui Xu | Ronald R. Yager

The dynamic multi-attribute decision making problems with intuitionistic fuzzy information are investigated. The notions of intuitionistic fuzzy variable and uncertain intuitionistic fuzzy variable...

14. Tuning fuzzy logic controllers by genetic algorithms

April–May 1995
F. Herrera | M. Lozano | J.L. Verdegay

The performance of a fuzzy logic controller depends on its control rules and membership functions. Hence, it is very important to adjust these parameters to the process to be controlled. A method is...

15. An automatic method to determine the number of clusters using decision-theoretic rough set

January 2014
Hong Yu | Zhanguo Liu | Guoyin Wang

Clustering provides a common means of identifying structure in complex data, and there is renewed interest in clustering as a tool for the analysis of large data sets in many fields. Determining the...

16. Fuzzy analytic hierarchy process: A logarithmic fuzzy preference programming methodology

June 2011
Ying-Ming Wang | Kwai-Sang Chin

Fuzzy analytic hierarchy process (AHP) proves to be a very useful methodology for multiple criteria decision-making in fuzzy environments, which has found substantial applications in recent years. The...

17. Bayesian classifiers based on kernel density estimation: Flexible classifiers

February 2009
Aritz Pérez | Pedro Larrañaga | Iñaki Inza

When learning Bayesian network based classifiers continuous variables are usually handled by discretization, or assumed that they follow a Gaussian distribution. This work introduces the kernel based...

18. Incorporating logistic regression to decision-theoretic rough sets for classifications

January 2014
Dun Liu | Tianrui Li | Decui Liang

Text of abstract Logistic regression analysis is an effective approach to the classification problem. However, it may lead to high misclassification rate in real decision procedures. Decision-Theoretic...

19. Updating attribute reduction in incomplete decision systems with the variation of attribute set

March 2014
Wenhao Shu | Hong Shen

In rough set theory, attribute reduction is a challenging problem in the applications in which data with numbers of attributes available. Moreover, due to dynamic characteristics of data collection...

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Available online 24 February 2014
Wojciech Froelich | Jose L. Salmeron

Time series are built as a result of real-valued observations ordered in time; however, in some cases, the values of the observed variables change significantly, and those changes do not produce useful...

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July 2014
Brian Ricks | Ole J. Mengshoel

System failures, for example in electrical power systems, can have catastrophic impact on human life and high-cost missions. Due to an electrical fire in Swissair flight 111 on September 2, 1998, all...

22. Triple I method of approximate reasoning on Atanassov's intuitionistic fuzzy sets

Available online 21 January 2014
Mucong Zheng | Zhongke Shi | Yan Liu

Two basic inference models of fuzzy reasoning are fuzzy modus ponens (FMP) and fuzzy modus tollens (FMT). The Triple I method is a very important method to solve the problems of FMP and FMT. The aim...

23. Inconsistency-tolerant reasoning with OWL DL

January 2014
Xiaowang Zhang | Guohui Xiao | Zuoquan Lin | Jan Van den Bussche

The Web Ontology Language (OWL) is a family of description logic based ontology languages for the Semantic Web and gives well defined meaning to web accessible information and services. The study of...

24. Feature selection with test cost constraint

January 2014
Fan Min | Qinghua Hu | William Zhu

Feature selection is an important preprocessing step in machine learning and data mining. In real-world applications, costs, including money, time and other resources, are required to acquire the features....

25. Soft clustering – Fuzzy and rough approaches and their extensions and derivatives

February 2013
Georg Peters | Fernando Crespo | Pawan Lingras | Richard Weber

Clustering is one of the most widely used approaches in data mining with real life applications in virtually any domain. The huge interest in clustering has led to a possibly three-digit number of algorithms...