

KNOWLEDGE ENGINEERING

V.F. Khoroshevsky. Structural Approach to Semantic Interpretation of Data Patterns

Structured approach to processing of data patterns images and semantic interpretation of these patterns are discussed in the paper. Brief state of art overview in domain of a structured approach to pattern recognition and scene analysis is presented. Description of the proposed structural approach is conducted in the context of data patterns images analysis and semantic interpretation data patterns received with the usage of classical methods of statistical analysis of indicators of science, education and innovation in the regions of Russia.

Keywords: semantic interpretation, data patterns, statistical analysis

A.O. Glekin. Pattern Recognition for Artificial Financial Market Data

In this paper a learning algorithm is proposed for prediction a behavior of the financial time series when new information affecting the market. The algorithm is designed for nonlinear markov model. The prediction problem is formulated as classification problem. Bagging is used to build efficient combined classifiers. Minimum Hamming distance classification method with genetic learning algorithm is used as individual classifiers. Experiments on real financial time series show that proposed algorithm has a fairly high generalization performance.

Keywords: multi-agents model, artificial financial market, classification, bagging, genetic algorithms.

E.V. Potapova, V.A. Shirokov. Multilingual ontology modeling as lexicographic system

This paper presents an integrated approach to the conceptual modeling of multilingual domain ontology based on the theory of lexicographical systems. The resulting model is implemented into instrumental system with the ability to visualize the fragments of the ontology in the form of cognitive terms maps.

Keywords: multi-language ontology, lexicographical system.

INTELLIGENT INFORMATION RETRIEVAL

I.V. Sochenkov.Text comparison method for a search and analytical engine

The paper presents the text model and comparison method to solve search and analytical tasks. The text model and comparison method cover lexical, morphological, syntactic and semantic information features. The paper discusses the application of the proposed method for the implementation of full-text, phrase, semantic and question-answering search as services of search and analytical engine.

Keywords: full-text search, search and analytical engine, search results ranking, phrase search, question-answering search, semantic search.

DATA ANALYSIS

S.E. Popov, R.Y. Zamaraev. Entropy Analysis Markup Language

The paper is devoted development of markup language EAML for formalizing of data structure exposition and calculation module of the Entropy method of analysis. The main rules of compiling of the system profiles integrating possibilities of a debugging, testing and visualization of data analysis results are defined. The example of analytical template in EAML language with inferences for complicated social and economic system are presented.

Keywords: meta description, data analysis, the entropy method, multi-criteria selection, system audit, functional parameters, complex systems

INTELLIGENT SYSTEMS AND TECHNOLOGIES

I.V. Smirnov, I.V. Sochenkov, R.E. Suvorov, I.A. Tikhomirov. Web content filtering: state of art and prospects

The paper presents state of art and prospects of web content filtering methods and tools. Analysis of content filtering systems principals is given, defined it's future development. Approaches for remedial of current solutions are discussed.

Keywords: content filtering, information security, parental control, text analysis, automatic classification

O.G. Pensky, K.V. Chernikov. Mathematical models of psichological facilities robots

The article introduced the mathematical concept of standard emotions, outcome emotions and the outcome of the final education of robots. Propose an algorithm to calculate and predict the results of the continuous educational process robots based theory of the Georgian psychologist D.N. Uznadze.

Keywords: robot, emotions, education

OPTIMAL CHOICE

N.J. Muzychenko, D.A. Tyurin. About one solution technique of the two-alternative commitment of sampling in the conditions of essential uncertainty.

The optimisation solution technique of the two-alternative commitment of sampling in the conditions of an essential blurring of unit estimates of the informative parametre and impossibility of formalising of process of their deriving is offered by statistical model. In the capacity of a criteriaon of performance the maximum of reliability of the made solution is used. The function of a fittings ensuring an extremum of the preset functional of quality on all available estimates of the informative parametre is discovered. Serviceability and efficiency of the offered method are confirmed by effects of matching and approbation in system of classifying of installations by results of measuring of their radio parametres.

Keywords: classifying, unsharp assemblage, fittings function, the unsharp ratio of prefere.