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## SUMMARY

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### THE MATHEMATICAL METHODS OF SYSTEM ANALYSES AND CONTROL

*Nechayev Yu. B., Voronkov B.N., Dolbilova E.S.*

#### THE MODELING OF THE METHOD OF SECRETIVE TRANSMISSION OF THE GROUP OF BINARY USEFUL SIGNALS USING THE SOFTWARE PACKET MATLAB/SIMULINK

The paper presents the results of modeling with software packet Matlab 6.5 the radiocommunication system for secretive transmission of the group of binary useful signals.

*Popov V.G., Sirota A.A.*

#### MODELING OF APPLICATIVE HANDICAPS IN PROBLEMS OF COMPUTING PROCESSING OF IMAGES

A model of applicative handicaps on images in the form of Poisson stream of spots with adjustable parameters of periodicity, sizes and configuration of formed local areas of closing is offered. A technique for calculation of a kind of correlation function of applicative handicaps is resulted. Conformity of this estimation with an estimation of correlation function received by a method of imitating statistical modeling is shown.

*Yarmoshevitch E.I., Mikhailova E.E.*

#### ANALYSIS OF SPECTRAL SPATIO-TEMPORAL IMAGING MODEL OF THE OBJECTS BY HUMAN VISUAL SYSTEM

It has been done the performance of functional achromatic spectral spatio-temporal imaging model of the objects with spatial brightness distribution by human visual system with mean and standard deviation of performance criterion determined through the ratio the contrast brightness of image to the contrast brightness of initial image and their cross correlation coefficient. Is shown that the processing of the quadrature signals are observed the minimum distinctions model image from initial image.

### MODERN TECHNOLOGIES OF SOFTWARE DESIGN

*Bogatiryv A.M., Voronina I.Ye*

#### THE DEVELOPMENT CONTROL SYSTEM OF FACIAL ANIMATION OF 3D MODEL FOR PROGRAM PACKAGE AUTODESK MAYA

The article is devoted to automation of CG-artist work to create the high-quality and universal facial muscles of biped and complex control facilities. The application is developed for Autodesk Maya as an external unit.

*Golub V. A., Lisachyv P. S., Potapova T. M., Moscalcov V. A.*

### THE METHOD OF TESTING DYNAMIC-LINK LIBRARIES

The article is dedicated to the topic of dynamic-link libraries. The feature of offered idea consists in the combination of "white-box" and "black-box" testing. Practical realization is conducted by the instance Microsoft Visual Studio and unit-testing framework for all .Net languages – NUnit.

*Golub V. A., Potapova T. M.*

### EXPANSION OF MICROSOFT VISUAL STUDIO FUNCTIONS WITH DATA DESIGNER EXTENSIBILITY (DDEX) TECHNOLOGY

The new method of providing necessary functionality of Integration Development Environment (IDE) to a developer is observing in the following article. This method consists in integration new data source into IDE. Practical realization is conducted by the instance Microsoft Visual Studio.

### THE INTELLECTUAL INFORMATION SYSTEMS

*Makhortov S.D.*

#### ABOUT APPLICATIONS OF LP-STRUCTURES IN THE PROGRAMMING THEORY

In the previous papers the author introduced algebraic systems (LP-structures) which formalize a logical-production inference on the basis of the theory of lattices and binary relations. The further research has shown the applicability of the given technology in various areas of the programming theory. The purpose of this article is to specify the application possibilities of LP-structures in more detail. Problems from various areas of computer science – which can be reduced to the production systems modelled by LP-structures – are listed in this paper. These are verification and optimization of knowledge bases of expert production systems, representation of mathematical knowledge, research of properties of imperative algorithms, refactoring automation, simplification of sets of rules of conditional term rewriting systems. The problem solving can be made using LP-structures or their modifications.

*Semenov B.A., Ledeneva T.M.*

#### SOLVING MULTI-CRITERIA OPTIMIZATION PROBLEMS WITH FUZZY CRITERIA

Paper describes the approach of the approach to solving multi-criteria optimization problems with fuzzy criteria.

**THE SYSTEM ANALYSES OF SOCIAL-ECONOMIC PROCESSES**

*Dylevskii A.V., Rudalev V.G., Bezryadin M.M.*

**THE PROGRAMMING COMPLEX FOR AUTOMATIC MANAGEMENT OF PORTFOLIO OF ACTIVES**

In given article is offered a mathematic methods of optimization for automatic management of portfolio of actives. The programming complex will be used for investors decision.

*Golub V.A., Kozlova I.N., Serezhenko N.P.*

**DETECTION OF EEG'S PATHOLOGICAL PATTERNS USING WAVELET TRANSFORMATION**

The problem of researching the possibility of detection of EEG's pathological patterns using wavelets is considered. It is shown, that patterns of "peak" and "slow wave" type could be detected both by the EEG's wavelet spectrum and by the equal level's lines of wavelet transformation.

**THE COMPUTER LINGUISTICS AND NATURAL LANGUAGE PROCESSING**

*Cherezov D.S., Tukachev N.A.*

**USING NEURAL NETS IN INDEXING AND RANGING PROCESSES**

In this thesis we discuss about algorithm of text indexing this using neural nets to raise documents relevance at ranging process. Neural net calculate probabilistic of document to belong to one of theme, which correct results of ranging process.

*Sedunov A. A.*

**A GRAPHEMATICAL ANALYSIS MODEL FOR NATURAL LANGUAGE PROCESSING SYSTEM**

Natural language processing systems are considered as one of the most promising IT areas. Usually text processing in such systems is characterized as complex and staged procedure. In this paper we research the problem of graphemathical analysis and describe its computational solution for certain NLP system. Special formalism elaborated for this problem is presented along with information model and software implementation.

**THE INFORMATION-CALCULANION, CONTROL AND NET SYSTEMS**

*Mayiorova M.V., Voronina I.Ye.*

**DEVELOPMENT OF A SUBSYSTEM OF PREPARATION AND OPERATION OF PROJECTS FROM STRUCTURE OF THE INFORMATION-ANALYTICAL SYSTEM**

The article is devoted to the questions of development of a subsystem of preparation and operation of projects from structure of the information-analytical system intended for storage, the account and data processing on various objects.