

## ABSTRACT&amp;REFERENCES

## INFORMATION TECHNOLOGY

**RESEARCH OF THE FACTORS WHICH INFLUENCE ON TIME OF RASTERIZATION (p. 4-7)****Margarita Kulichenko, Galina Turchinova, Irina Chebotareva**

The article relates to the rasterization of raster and vector images for their output to a phototypesetter in conditions of an operating company. The main objective of the study is to determine the dependence of processing time of digital images (preparation of the exposure matrix) using RIP, on various factors, using statistical methods. The article assumes that the dependence of the processing time (rasterization) of an image on the volume of digital file is linear. So unreasonably high resolution of images, the use of unnecessary colors and excessive effects in vector files lead to the growth of the processing time of files for the out device, and consequently reduce the efficiency of the company operation. The results of this research can be used as guidelines in study of the characteristics of pre-press preparation of images as well as in preparation of original models for printing

**Keywords:** out device, population, dispersion, pre-press preparation, correlation, exposure matrix

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**IDENTIFICATION AND AUTHENTICATION - METHODS OF PROTECTION FROM UNAUTHORIZED ACCESS (p. (8-10))****Zoia Gadetska, Dmytro Omelchuk, Roman Litvin**

Each user of modern information and communication systems faces the procedures of identification and authentication several times a day. There are some methods of identification and authentication which differ in complexity, reliability, cost and other parameters. The range of problems connected with application of methods of information protection is researched in the work. These methods are based on using portable devices (tokens, electronic keys), passwords, biometric characteristics, determination of user coordinates. Advantages and disadvantages of considered methods, prospects of their further development are defined.

The choice of specific protection method is determined by industrial, financial and other means, volume of confidential information and its significance. But it is necessary to remember that there is no absolutely reliable protection. Measures for protection of information should be complex, systematic and should combine different methods and means

**Keywords:** authentication, identification, password, token, biometrics, method of information protection, electronic key

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**INFORMATION TECHNOLOGY FOR PREDICTION HISTORICAL DYNAMIC WITH CONTROLLED WORLD MODEL (p. 11-14)****Igor Svergunenko, Vasiliy Lisitskiy**

The article relates to the prediction of the development of the global system and the national economy, taking into account the influence of the dynamics of global processes. The main purpose of the study is the development of information technology for prediction of historical dynamics of the global system and the national economy, using the methodology of system dynamics and capabilities of models of the controlled world, the detection of the global problems on its basis and prediction of the dynamics of their development.

This article discusses approaches to the analysis of economic processes and the methodologies of their prediction. The article represents an information technology of long-term prediction of the historical dynamics based on the simulation model, which integrates a modified model of the global dynamics and model of controlled world, capable of reliable reflection of the historical dynamics of the global processes of the global system and separate states. The software implementation provides forward trajectories of global processes development. The research results can be applied to detect global problems on a global level and on the level of an individual national economy that will permit to choose effective ways of solutions of global problems.

**Keywords:** information technology, prediction, historical dynamics, model of controlled world, global system.

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**MARKETING STRATEGIES AND POSITIONING OF THE UNIVERSITY IN SOCIAL NETWORKS (p. 14-17)**

**Kateryna Sloboda, Oksana Peleshchyshyn**

Online communities are valuable for university in terms of marketing in two major aspects: as a communication medium with the outside world and as an information source about the object of marketing, users' reactions, the competitors' activity and other features.

Nowadays many different online communities exist in the World Wide Web. It is well known that online marketing cannot be maintained in all or even in a large part of them. Therefore, an important task that precedes the active online marketing actions is to define multiple communities, in which marketing actions will be carried out.

Definition of communities is based on the analysis of their content, especially on discussions in the community and community's rankings.

In this paper a new method for university positioning via social networks is proposed, strategies for online marketing are discussed and options for using these strategies in the process of positioning the university are proposed, certain basic principles of university positioning in social networks are set.

The peculiarities of implementation of positioning strategies of the two most popular in Ukraine social networks are compared, and stages of positioning are defined. The means to increase trust rate to the official pages and groups among social networks users re proposed.

The main stages for monitoring the effectiveness of methods and means for positioning are defined

**Keywords:** online marketing, social networking, strategy, positioning, monitoring the positioning effectiveness

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**METHODS OF ANALYSIS OF RECLAMATION GEOINFOMATSMONOGO ABANDONED QUARRY (p. 20-24)**

**Konstantin Meteshkin, Maxim Kuhar, Vladislav Kozyrenko**

Throughout the territory of Ukraine, especially in large cities such as Kharkov, there are areas previously used for industrial purposes, as well as for mining and construction materials extraction. Now they are abandoned anthropogenic areas, vacant lots and quarries.

These areas harm the environment, but at the same time, when used reasonably, they can be benefit and profitable.

We present solutions to the problem by means of reclamation. The article analyzes the difficulties, connected with this work, ways of their solution and optimization of results.

To improve the efficiency of planning and reclamation of abandoned areas we propose in the article to use the methods of satellite geodesy and modeling of volumes of complex configuration using GIS technologies.

**Keywords:** quarry, anthropogenic area, reclamation, ERDAS Imagine, ArcGis, ArcMap.

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## DISTANCE LEARNING AS A SYSTEM IMPROVEMENT MODERN TEACHER QUALIFICATIONS (p. 25-29)

Nataly Tverdokhlebova, Yevhenii Semenov

Despite the great number of discussions as to the demands of the modern education to a teacher of higher technical schools under conditions of the rapid updating and improvement of information educational technologies, there are not formulated means and conditions of the basic professional skills of a modern teacher. The article analyzes and describes the results of the study of functions of professional activity of teachers in a higher technical school, justifies the nature, content, role and main advantages of e-learning in the improvement of professional skills of teachers and formation of their pedagogical culture.

We have discussed the components of pedagogical culture, which may be subject to further formation when improving teachers' professional skills according to e-learning. The article provides characteristics of the learning environment as a combination of elements, which significantly affect the persons and include elements of organization of a process of learning and education, methods and form of learning, which are based on the interaction between the subjects of the educational process. On the basis of the material the authors propose to introduce the e-learning to the system of improvement of the professional skills, training and retraining of teachers in higher technical schools.

**Keywords:** professional activity of a teacher, components of pedagogical culture, e-learning, learning environment.

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## STRUCTURING CONTEST OF BRANCH DEVELOPMENT PROGRAMS IN UKRAINE (p. 29-35)

Alexander Vanyushkin

The article presents the analysis of the Ukrainian "State program of machine building development during 2006 – 2011". The following basic elements of the program as "The current state of machine building development", "The goal and the basic tasks of the program", "The major directions of the program implementation", "The stages of the program implementation", "Financial support of the program" and "The expected results of the program" are analyzed

in the report. The major shortcomings of the program, which are generally connected with the incorrect definition of the goal and the main tasks, the lack of detailed measures and arrangements in the program appendix, have been determined in the article. On the basis of the revealed drawbacks of the program, a new structuring of this branch document has been proposed. It includes the complex of interrelated projects, directed at improvement of tax privileges in the branch, the state support of export contracts and modernization projects in the branch through export credit agencies, state support of leasing programs, as well as research and development (R&D) programs

**Keywords:** development program, machine building, structure, support

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## PARSER AS A TOOL FOR NATURAL LANGUAGE UNDERSTANDING BY MACHINE (p. 35-38)

Iryna Zhyriakova, Mykhailo Symonenko

This article discusses the features of design and implementation of a tool for machine understanding of natural language texts and presents the results obtained. The main purpose of the study is a comprehensive analysis of applicability of modern approaches and paradigms of parsing to design Russian language text parser. Following the results of the study, we have developed a prototype, which is based on the proposed logical-linguistic model of textual information and which uses grammar of relationships for categories of elements of language structures.

The prototype provides a formal representation of textual information in natural language in the form of the dependencies tree without using the parsing.

The features of realization include the separation of a module of text processing to prepare it for parsing by pre-segmentation and tokenization, and the solution of the problem of morphological homonymy by choosing among possible grammatical forms the one, which provides the maximum composition of the dependencies tree. The results can be used to design a comprehensive system of the machine translation.

**Keywords:** understanding of natural language texts, primary analysis of natural language, natural language parser design

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### PRINCIPLES OF DESIGN AND DATABASE STRUCTURE OF “RESORT MANAGER” SANATORIUM SOFTWARE (p. 39-42)

Anatoliy Motorny, Sergiy Zlepko, Leonid Koval, Sergiy Kostishyn

The present article deals with problems of the spa facilities management, and the database structure of modern sanatorium complex software, which automates the functions and activities and also improves the quality of institutions streamline information flows and brings customer's service to a new higher level. The conclusions about the feasibility of using this system in the workflow institution.

The “Resort Manager” sanatorium software consists of 3 units: “The Settle”, “The Setting Procedures” and “Dining room”

The unit “The Settle” is designed to registrate customers in sanatorium database and to automatize all the proceses connected with it. For this purpose the database includes such tables as “customers”, “room”, “config”, “archive” and so on.

The unit “The Setting Procedures” is designed to generate customer's medical procedures list with taking into consideration a lot of factors such as procedures incompatibility, maximal procedures number per day and so on. For this purpose the database includes such tables as “procedures”, “incompetable procedures”, “config”, “archive” and so on.

The unit “Dining room” is designed to automatize calculation processes of needed ingredients for cooking, number of meals and general usage of foods for each day. For this purpose the database includes such tables as “ingredients”, “meals”, “days” “config”, “archive” and so on

**Keywords:** spa facilities, software, management, information technology, system, optimization, automation, “Resort Manager”

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### ALGORITHMS IMAGE SEGMENTATION ARE BASED ON THE MATRIXES OF COINCIDENCES (p. 43-45)

Victor Bilokoneno, Ilona Revenchuk

The algorithm of image segmentation method with matrix of coincidences for images with a pronounced texture is describe in the article. Database of standard textures and vectors in the method of the matrix coincidences recognition of textures are used. As with segmentation, the original image is divided into fragments of a certain size. For each fragment to created a vector of characteristics.

Then, the resulting vector with standard vectors is compared. The decision on belonging fragments input image texture classes is taken after comparison.

Creating a class texture feature vectors are compared fragments with a random vector - a benchmark. To improve the process, you can improve the vector - a benchmark.

**Keywords:** image recognition, texture segmentation of images, vector characteristics.

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## RISK ANALYSIS OF THE IMPACT OF MALICIOUS SOFTWARE ON DATA SECURITY IN MODERN CYBERSPACE (p. 45-51)

Yuriy Kopytin

Despite the considerable amount of works dedicated to the issue of distribution of scumware, there is no risk-oriented research on the harmful effects of the scumware on the cyberspace. The article demonstrates the process of construction of a system of protection against the scumware, based on the mechanisms of information security risks control.

The suggested variant of protection from the scumware will improve the level of data protection at the global level by coordinating the efforts of government and private sector. The conducted analysis of risks of impact of scumware on data security in the modern cyberspace showed that this threat is one of the most dangerous and can easily paralyze the work of all computers that have access to the Internet.

Usage of the developed graphical model and the implementation of measures against the scumware will allow organizations to understand the scale of the problem and choose the best solution to ensure the protection of confidentiality, integrity and availability of electronic information.

**Keywords:** risk, data security, cyberspace, scumware, vulnerability, threat, protection means.

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## THE TESTING PROCESS OF EXPERT SYSTEMS FOR IMPLEMENTATION IN BUSINESS INTELLIGENCE (p. 51-55)

Natalia Kovtun, Mikhail Nesterenko, Irina Tsemkalo

The article describes a system based on BI methods and tools to analyze the financial performance of the bank, the use of expert systems in the field and the testing of a similar expert system. It considers the purpose of systems of business analysis, and several systems, which ensure the most effective business decisions. There is a comparison of BI tools, pros and cons of each of them. The article provides conclusions as to the chosen software emphasizing the relevance of usage of SQL SERVER 2008 R2 of Microsoft. There is a description of the solution online analytical processing. The article concerns problems of systems of support of decision making at large amounts of input data.

As a solution, we have proposed the integration of expert and decision support systems. Integration of expert and decision support systems increases the efficiency of the whole system, making decision support system more active and valuable participant in the decision making process.

The article considers the stages of industrial testing, its main features, and examination of CASE-tool Rational Suite. The article analyzed the stages of testing of expert systems, namely testing of output data, logical testing of knowledge base, and conceptual testing of application system. The article provides conclusions as to the importance of formalization of testing of expert systems in Business Intelligence.

**Keywords:** Business Intelligence, Reports Services, testing, metrics, expert systems, artificial intelligence

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## THE DEVELOPMENT OF ELECTRONIC MEDICAL RECORDS AT RISK OF STROKE (p. 56-58)

Olga Sharovskaya, Tatyana Zhemchuzhkina, Tatyana Nosova

Stroke is a major health and social problem, due to its high share in the structure of morbidity and mortality, and significant indicators of temporary work loss and primary disability.

The article suggests a way of prediction and diagnostics of stroke using an electronic medical record, which is a set of sections of patient registration, search for existing records in database, modification of existing records in database, processing of the data on patients. In addition, we have provided for possibility of statistical record of patients.

The main part of the developed electronic health records is a questionnaire, which includes the main symptoms and factors of stroke development.

On the basis of the questionnaire using the linear discriminant analysis we have calculated the probability of getting into the stroke risk group

**Keywords:** stroke, electronic medical record, electronic health record, database, risk group, risk factors, questionnaire, symptoms of stroke

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## ANALYSIS OF THE PROBLEMS OF TRUST IN CLOUD COMPUTING (p. 59-62)

Tatyana Belova, Irene Pobizhenko, Vladimir Pobizhenko

This article provides an overview of the concept of the term trust in cloud technologies.

The trust is a crucial factor in the migration of organizations to the cloud. This paper describes the identification of the problems faced by organizations in the search for the selection of suppliers for migration.

Different authors have different interpretations of the term trust. Data security is directly related to the confidence in cloud technologies.

Five situations are shown when you need to trust in cloud computing.

We consider separately the provision of services in the cloud. Client must trust the computing environment provided by the cloud computing.

This article considers trust in computer science its definitions and models show how these models are used in ensuring trust in adoption of cloud computing

**Keywords:** trust, level of trust, cloud, cloud computing, cloud calculations, service, threats information, certification, safety of network, confidentiality

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## ANALYSIS OF MODERN TYPES AND METHODS OF UNIVERSITIES' INFORMATION ACTIVITY ON THE INTERNET (p. 62-65)

Roman Korzh, Andriy Peleshchshyn

The issue of exploiting modern both technical and organizational methods of informational interaction with society is a topical issue for a university as the most communication-oriented institution.

Universities are those organizations with great information potential, which can be employed in information interaction with the outer world.

Due to complex nature and resource structure, which can be used by universities in their information activity, efficient and comprehensive resource exploitation is possible only in case of complex usage of possible ways and types of information activity.

In the paper one of the dynamic ways of information activity, i.e. activity on the Internet, is investigated, formalization of types of this activity as a basis for further detailed description and advanced analysis is carried out.

**Keywords:** the Internet, Web, social communications, university, information activity, modeling processes.

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