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Statement of Purpose

The **JOURNAL OF INFORMATION SYSTEMS & OPERATION MANAGEMENT (ISSN 1843-4711)**, published two times annually by the Romanian American University, is specialized in IT domains. The articles published, apply to the scientists, researchers and users of IT (field), interested in enlarging the knowledge horizon with specialty notions, new work papers and reference studies, to apply in their own field. Through the presentation of some scientific paper works and IT&C culture promotion, necessary for a functional market economy, the review intends to be a favorable space for debates and a challenge at the same time. Any study or opinion that can contribute to the development of the understanding degree of the IT&C as a science is welcome. JISOM encourages cross-disciplinary research work of Romanian and foreign scholars.

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IMPLEMENTING A MODERN TEMPORAL DATA MANAGEMENT SYSTEM

*Ramon Mata-Toledo¹
Morgan Monger²*

Abstract

Temporal data management is a concept that has been around for many years. A temporal data management system (TDMS) manages data that is tracked over time. In this paper, the authors present an Oracle-based implementation of a TDMS that provides access to temporal data. The design and implementation presented in this paper are presented at a high level, with the significant features such as reference intervals and temporal relationships. The most notable TDMS benefits are a semi-portable solution and an implementation that maximizes on native database features. The paper finally presents an evaluation of the TDMS implementation with a feature comparison and benchmarking.

SECURITY OPTIMIZATION OF A DISTRIBUTED APPLICATION FOR CALCULATING DAILY CALORIES CONSUMPTION

Mihai Doinea³

Abstract

General concepts of calorie expenditure are presented, revealing the needs and the main factors that influence the overall calculation of calorie need for the human body. A distributed application for helping individuals manage daily calorie consumption is presented and ways of optimizing the daily calorie need is achieved by offering different daily menus depending on the intensity effort calculated a priori. Security optimization criteria are presented for distributed applications and an open source encryption algorithm is used for implementing one of the optimization criteria discussed.

Keywords: distributed applications, security optimization, calories, daily menus.

ORTHOGONALITY OF STRUCTURED DERIVED ENTITIES

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Abstract

Structured entities, derivative entities and their order are presented. The orthogonality metric for structured and derivative entities is build. This metric is implemented. The sets of structured entities and first order derivative entities will be evaluated and analyzed.

Key words: structured entities, derivative entities, metric, sets.

THE SOFTWARE EFFECT ON THE QUALITY OF THE FINANCIAL ACTIVITY OF THE COMPANIES

Corina Ioanăș⁷
Mihaela Gruiescu⁸
Octavia Elena Lepas⁹

Abstract

Organizations now have the opportunity to fulfill most of their information system requirements through software packages, rather than building bespoke solutions. The advantages of this approach, particularly the perceived cost and time savings, appear self-evident. However, there are disadvantages, which must be carefully understood and evaluated before selecting and purchasing a software package. The organization must also be aware that it is probably entering a long-term commercial relationship with a supplier. It may be costly and difficult to end such a relationship, as converting data from one product to another may be prohibitively expensive. Hence the risks of the software package approach must be identified and appropriate risk avoidance and mitigation actions developed.

Key words: *information systems, competitive edge, the quality of the information, the software risks.*

ANALYZING STRUCTURED TEXT ENTITIES USING A CITIZEN ORIENTED APPLICATION

Bogdan Vintila¹⁰

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Abstract

The concept of citizen oriented informatics application is presented in the context of the knowledge society. The differences between these applications and the traditional applications are highlighted. The diversity of problems the citizens has lead to a high diversity of application structures that is described in the paper. Usual applications are taken into discussion and comments are made on their citizen orientation. Quality standards for informatics applications are described. An application for the analysis of the structured entities is presented. The methods that were used to orientate it towards the citizens are described. The procedure for the score computing is described. The performance of the application measured by automatic means is analyzed. Performance improvements are discussed. Future work directions and improvements are discussed.

Keywords: citizen oriented applications, knowledge, analysis, structured text entities.

THE ANALYSIS OF INFORMATICS SECURITY COSTS IN CITIZEN ORIENTED APPLICATIONS

*Dragos Palaghita¹¹
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Abstract

The paper highlights the analysis of informatics security costs for the citizen oriented applications. The citizen oriented informatics applications are defined. The differences brought by these when compared with the traditional applications are described. Structures of citizen oriented informatics applications are presented. A few common citizen oriented applications are discussed. The special security requirements of the citizen oriented applications are discussed. Ways of increasing the security of the applications are given.

Key words: security, cost, estimation, citizen orientation, distributed applications.

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ELECTRONIC CORPORA IN TRANSLATION BOOTCAT-BOOTSTRAPPING CORPORA AND TERMS FROM THE WEB

*Mariana Coanca*¹³
*Elena Museanu*¹⁴

Abstract

In the new world of technology, the translation profession, like other disciplines, cannot be deprived of modern tools such as electronic corpora. Recently, large monolingual, comparable and parallel corpora have played a crucial role in solving various problems of linguistics, including translation. During recent years, a large number of studies within the discipline of translation studies have focused on corpora and their applications in translation classes. Such studies mainly look into the kind of information trainee translators can elicit from corpora and the effect of using corpus data on the quality of translations produced. Corpora, however, have a lot more to offer to both translation teachers and translation students. Corpus-based translation classrooms, by their very nature, can offer considerable advantages far beyond what traditional translation classes have to offer. This article, in fact, aims to elaborate on advantages of using corpora in translation classrooms for teachers and students of translation. Furthermore, we present types of corpora and a new method of compiling specialized corpora- BootCaT.

THE ELECTRONIC SIGNATURE (E-SIGN) IN THE INFORMATION SOCIETY

*Virgil Chichernea*¹⁵

Abstract

This paper deals with the legislative and technical aspects, concerning the electronic signature and examples regarding the implementation of the e-sign software security solutions in the information society. One of the major problems the IT developers for complex systems have to deal with, is to provide the security of data and the information administered by these systems, as well as to certify their authentication by the electronic signature. The certification procedures and the encryption algorithms, used for the electronic signature are needed in today's information society.

Keywords: e-sign, software security, information security, Decision Support System(DSS).

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GAINING EXPERIENCE AND KNOWLEDGE THROUGH ROMANIAN-AMERICAN UNIVERSITY – MICROSOFT INNOVATION CENTER

*George Carutasu*¹⁶
*Cornelia Paulina Botezatu*¹⁷
*Cezar Botezatu*¹⁸

Abstract:

This paper presents activities of Microsoft Innovation Center set inside of Romanian-American University (MIC-RAU) and the implementation of Dynamics Program in student activities and curricula. Romanian-American University is the most known private university from Romania, Bucharest, having more the 15 000 student, being organized in six faculties, where fifth has economic profile and one being specialized in law. In this case the challenges of Dynamics Programs implementation was to elaborate courses suitable for various groups of student with different background, but in the same time to keep the core knowledge needed to understand and operate with Microsoft Dynamics products.

The learning process was completed with practice experience in internships organized in collaboration with Microsoft Partner network from Bucharest. The last stage of Dynamics implementation consists in a series of researches made by graduate students on Master program, in their Dissertation Thesis.

Keywords: innovation management, information systems, R&D management, knowledge management.

INTEGRATION PROCESSES QUALITY IN HETEROGENOUS ENVIRONMENTS

*Ion Ivan*¹⁹
*Leonard Săcuiu*²⁰

Abstract

It presents heterogeneous distributed software applications concept. It describes integration techniques. It defines quality of integration processes regarding heterogeneous environments. It defines quality metrics for heterogeneous e-commerce applications.

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Keywords: integration, distributed environments, *software process*.

PROJECT-BASES RISK MANAGEMENT

*Andrei Sandu*²¹

Abstract

The project-bases concept is presented. There are defined operations on project-bases. The software developed for project-bases management is analyzed based in its structure and functionality. A series of criteria of structuring risks is listed are tailored for project-bases management. Next there are suggested solutions of mitigating risks by maintaining efficiency within acceptable thresholds.

Key words: risk, project-base, software, management.

A BANKING COLLABORATIVE TAGGING SYSTEM

*Cristian Ciurea*²²

Abstract

The paper presents the collaborative systems classification by field of application. There are described the collaborative tagging systems and an implementation of this kind of systems is analyzed in a commercial bank. The Collaborative Multicash Servicedesk application is presented in order to implement an auto-complete facility.

Keywords: *collaborative systems, tagging, auto-complete, banking, application.*

RISKS IN DEVELOPMENT OF VERY LARGE DATA SETS ORIENTED APPLICATIONS

*Sorin Pavel*²³

Abstract

Very large data sets are defined.

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The features of the online operation with large data sets are described. A risk classification and analysis is made in working with large data sets oriented software. Experimental results are presented.

Keywords: *large data sets, risk, online operation*

LINEAR DISCRETE CONVOLUTION AND ITS INVERSE. PART 1. CONVOLUTION

Mircea Cirnu²⁴

Abstract

We present here several ways of calculating the linear discrete convolution, its inverse - the deconvolution, by direct methods, generator functions, Z-transform, using matrices and MATLAB. These notions was used by author in a series of papers, especially for solve several types of equations.

Keywords: **complete and truncated linear discrete convolution and deconvolution.**
2000 Mathematics Subject Classification: 40-04, 40A05

NEW METHODS FOR SOLVING ALGEBRAIC EQUATIONS

*Mircea Cirnu²⁵
Irina Badralexi²⁶*

Abstract

Iteration methods are very useful in solving nonlinear algebraic equations. The most famous such method is Newton's method deduced by first order Taylor expansion. In 2003, J. H. He gives a new faster convergent method, based on second order Taylor expansion, that gives a quadratic equation for the iterations difference $x_{n+1}-x_n$. However He's method is not applicable when this equation has complex roots. In 2008, D. Wei, J. Wu and M. Mei eliminated this deficiency, obtaining from third order Taylor expansion a cubic equation, that always has a real root.

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In this paper, we present the three methods and their applications to some particular equations.

E-COLLABORATION THE NEW ECONOMIC WORLD

*Costin Aurelian-Răzvan*²⁷
*Țolea Eniko*²⁸

Abstract

In this paper we will present what e-collaboration means and how can this concept revolutionize the XXI-th century economy. Our analysis leads to a conclusion that the future of business will be based on technological backgrounds. Breaking time and space frontiers will be the key of success in a hard competitive business environment. In our opinion this goals will be achieved by the implementation of groupware. However, our study shows that this field still needs a lot of normalization as concept of e-collaboration still has no standard approaches and many theoreticians still confuse collaboration with the classical “three c” terms.

MULTIMEDIA STREAMING PLATFORM BANDWITH CONTROLL CONGESTION DETECTION AND BANDWIDTH ADAPTATION

*Ovidiu Rățoi*²⁹
*Haller Piroška*³⁰

Abstract

We propose a platform for distributed multimedia systems. The proposed platform is implemented using the Netscape Portable Runtime (NSPR) and the Cross-Platform Component Object Model (XPCOM). This ensures system portability, flexibility and performance. The platform is equipped with a congestion detection algorithm and a bandwidth control mechanism thus controlling the transfer rates between the communication parties. Using this kind of bandwidth management this platform allows real-time streaming across multiple networks.

Keywords — *real-time multimedia platform; XPCOM components; congestion detection; bandwidth control;*

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COMPUTER NETWORK SECURITY PROTOCOLS

*Dragos-Paul Pop*³¹

1 Abstract

The rapid growth of the Internet and corresponding Internet community has fueled a rapid growth of both individual and business communications leading to the growth of e-mail and e-commerce. In fact, studies now show that the majority of the Internet communication content is e-mail content. The direct result of this has been the growing concern and sometimes demand for security and privacy in electronic communication and e-commerce. Security and privacy are essential if individual communication is to continue and e-commerce is to thrive in cyberspace. The call for and desire for security and privacy has led to the advent of several proposals for security protocols and standards. Among these are Secure Socket Layer (SSL) and Transport Layer Security (TLS) Protocols; secure IP (IPSec); Secure HTTP (S-HTTP), secure E-mail (PGP and S/MIME), DNDSEC, SSH, and others. Before we proceed with the discussion of these and others, we want to warn the reader of the need for a firm understanding of the network protocol stack.

Keywords

- Application level security – PGP, S/MIME, S-HTTP, HTTPS, SET, and KERBEROS
- Transport level security – SSL and TLS
- Network level security – IPSec and VPNs
- Link level security – PPP and RADIUS

ELECTRONIC COMMERCE SECURITY IN THE CONTEXT OF THE MEANS OF PAYMENT DEMATERIALIZATION

*Alexandru Pîrjan*³²

Abstract

Some items regarding electronic commerce, electronic vulnerabilities, electronic means of payment, digital money and electronic micropayments are presented below. Then is presented a method of assessing the quality of applications and e-commerce Web sites. This method is then adapted from the operational point of view, developed and implemented in the study of the electronic micropayment systems' security, in the

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purpose of analyzing and evaluating their security in the context of the means of payment dematerialization.

Keywords: e-commerce, micropayment, security, encryption, digital economy, EWAM.

A NEW-AGE TECHNIQUE OF PHISHING USING XSS

Negrilă Alexandru³³

Introduction

Since internet appeared, information about us are not safe anymore. There are constantly persons who are trying to penetrate a system or to steal data about other people. Few of them want to demonstrate to themselves that they can but there are others that try to obtain money from hacking or stealing data.

In the field of computer security, phishing is the criminally fraudulent process of attempting to acquire sensitive information such as usernames, passwords and credit card details by masquerading as a trustworthy entity in an electronic communication. Communications purporting to be from popular social web sites, auction sites, online payment processors or IT administrators are commonly used to lure the unsuspecting public.

CURRENT APPROACHES IN MODERN CRYPTOLOGY

Mircea Andrașiu³⁴

1. Abstract

This work proposes a brief analysis of the different types of current approaches to modern cryptology in present days. Due to increased development of communications and IT technologies, the field of cryptography practical approaches exceeded your government / military / intelligence / bank, eventually passing the civil environment and / or private. This process has soared in recent years and the requirements of market economy have forced a trend towards standardization of the theory and practice in cryptology. From there follows a rapid dissemination, sometimes without authorized assessment any official post by a wide range of users, including the private sector.

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This purposes as stated above, we try an analysis of current patterns of cryptology approach to find action ways for national authorized entities to follow in the near future to synchronize efforts made in the same field of other countries and / or alliances or international organizations.

Finally, it should be noted that we considered only the approach of the different types of entities of the cryptologic phenomenon, without regard to side - the scientific approach, which may be subject to other works.

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