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The "JOURNAL OF INFORMATION SYSTEMS AND OPERATIONS MANAGEMENT" (http://JISOM.RAU.RO) published by the Romanian American University Bucharest, Romania, is specialized in IT area. The articles published, apply to the scientists, researchers and users of IT area, 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 statistical culture promotion, necessary for a functional market economy, the review wants to be a favourable 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 area as a science is welcome.

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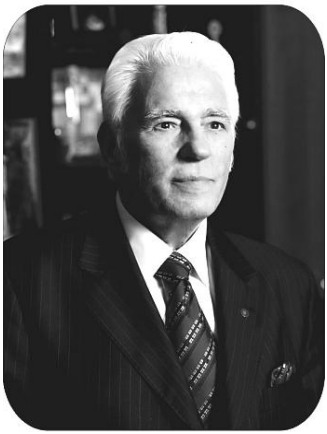
# IN MEMORIAM
# ION SMEDESCU

PRESIDENT-FOUNDER AND RECTOR OF THE
ROMANIAN-AMERICAN UNIVERSITY



**Phd. Ion Smedescu** founded the Romanian-American University in 1991, with the purpose“ to promote the educational values of the American higher education on the background of the outstanding results of the Romanian higher education”, a national project which His Excellency defined as follows: ”Romanian-American University means everything to me: home , family, profession, leisure time.”

The academic community from the Romanian-American University lost not only the professor which has guided its steps wisely, skillfully and clearly, for 18 years, but also the MAN which stood by it, understood its worries, anxieties, encouraged and urged it permanently to surpass itself.

# FOREWORD

In 1991 the Romanian-American University was established in Bucharest, Romania, an institution entirely committed to promoting the values of American academic education on the background of the rich traditions of the Romanian education well-known abroad.
The initiator and founder of this university is Professor Ion Smedescu Ph.D., Rector of the Romanian American University, President of the Romanian American Foundation for the Promotion of Education and Culture, active member of the New York Academy of Sciences.
The university comprises six Faculties, whose number of students is more than 15.000:

- The Department of Studies for European Economic Integration;
- The Department of Management - Marketing;
- The Department of Domestic and International Commercial Financial - Banking Relations;
- The Department of Domestic and International Economy of Tourism;
- The Department of Computer Science for Business Managemnent;
- The Law School.
- We also have approximately 2.000 students enrolled in graduate programs. Our main focuses are business and law.

The university has been accredited through Law nr. 274 as of May 15, 2002, and operates as a higher education institution enjoying its full rights, as well as facing its due responsibilities. The university is a statutory warrant for its students, as well as a guarantee of stability, promotion and increased performance of its academic body.
For more information: **www.rau.ro**
Starting with the academic year 2002-2003, the Ministry of Education and Research gave the Romanian-American University from Bucharest the approval to organize Master's Degree programs. There are currently 9 ongoing Master's Degree programs organized by majors and coordinated by the respective departments in the University.

The students enrolled in the Computer Science in Economics MS program present the results of their research activity in the "INFORMATION SYSTEMS & OPERATIONS MANAGEMENT" workshop. Each of the six editions of this workshop, which took place

during the semesters of each academic year, have been honored by students from abroad enrolled in the BRIE MA Program organized by the Academy of Economic Studies and in the "Computer Science" Program organized by the University "Politehnica" Bucharest. The first number of the "JOURNAL OF INFORMATION SYSTEMS & OPERATIONS MANAGEMENT" contains the representative papers selected from the six editions of this workshop.

We express our thanks to participants, to our colleagues from the Romanian- American University, Academy of Economic Studies and University "Politehnica" Bucharest, whose efforts, skills and understanding contributed to the welfare of the workshop. We would also like to thank the authors of these projects for presenting their research. In particular, we thank the chairmen of the different sections for their continuous support, our gratitude to Professor Ion Ivan and Professor Ion Bucur, two of the initiators of this project. We also like to thank our Assistant Professor Gabriel Eugen Garais and Assistant Professor Mariana Coancă for their diligence in preparing the final version of the projects.

Bucharest, December, 2008

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# Properties of the Collaborative Systems Metrics

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**Abstract.** The paper describes the key properties of the collaborative systems. There are presented main quality characteristics for the collaborative systems. The paper analyzes different types of indicators. They represent the base for further metrics definition. There are described the indicators most important characteristics as sensitivity, non catastrophic, non compensatory and representatives.

# COMPETITIVE ADVANTAGE BY INTEGRATED ERP-ADONIS IN MASTER PROGRAMMES CURRICULA

By
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Abstract

*This paper present ERP-ADONIS package (overview, structure, documentation ) and conceptual framework for the development, integration and evaluation of this package into teaching education program. ERP-ADONIS was specifically designed for the particular needs of financial services organizations and provides functionality primarily for the following application areas: Business Process Optimization; Quality Management, Process Costing, Personnel Management, Organization Management, Information Management, Creation of electronic handbooks which can be made available over an intranet with the use of powerful multi media functionality, Evaluation of Business Processes etc. ERP-ADONIS is a client/server multi-user system, which has an object-oriented structure.*

# B2B oriented on-line applications generator

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Abstract

B2B applications are presented. Quality characteristics of B2B applications are defined. B2B application structure is defined. The application for contracts is developed. The advantages are identified.

Key words: B2B, quality, structure, efficiency.

# On the Borda Method for Multicriterial Decision-Making

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**Abstract**

The present paper discusses two issues with multicriterial decision-making methods of Borda type (when scores such as *n, n-1,…, 2, 1* are given to the objects to be ranked and the hierarchy is obtained based on the totals of these scores). The first issue is related to the influence on the result of various transformations of the scores. We show that a linear transformation of the scores does not change the final ranking and that (almost) any polynomial of second degree or more, with positive coefficients, can alter the solution (ranking). The same happens if one changes the scores by employing the logarithm, exponential, or square root functions. In the second part of the paper we consider an iterated version of the Borda method. We show that this method is not robust: there are cases when different solutions are returned at different iterations.

# OPTIMAL AREA AND PERFORMANCE MAPPING OF *K*-LUT BASED FPGAS

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George CULEA, *University of Bacău, Faculty of Electrical Engineering,*
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*FPGA circuits are increasingly used in many fields: for rapid prototyping of new products (including fast ASIC implementation), for logic emulation, for producing a small number of a device, or if a device should be reconfigurable in use (reconfigurable computing). Determining if an arbitrary, given wide, function can be implemented by a programmable logic block, unfortunately, it is generally, a very difficult problem. This problem is called the Boolean matching problem. This paper introduces a new implemented algorithm able to map, both for area and performance, combinational networks using* k-*LUT based FPGAs.*

**Keywords**: *k*-LUT based FPGAs, combinational circuits, performance-driven mapping.

# The development of computer science oriented towards the citizen

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**Abstract:** The concept of informational application oriented to the citizen is defined. The quality characteristics for the informational applications developed under the conditions of computer science oriented towards the citizen are settled and the structure of the development cycle for these applications is presented. The conditions of existence for applications oriented towards the citizen are defined. Strategies on medium and long term are structured.
**Key words**: distributed applications, metric units, orientation towards the citizen, strategies.

# Corruption and Taxation in the New European Union Member States

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**ABSTRACT**

This paper analyzes tax capacity and tax effort in new European Union member countries and (potential) candidate member countries. In addition, the paper explores the hypotheses of negative relationships between corruption and tax effort and between corruption and foreign direct investments. However likely these hypotheses are, the paper finds only very weak empirical evidence supporting them.

**Keywords:** corruption, tax effort, foreign direct investments, European Union

# STRATEGIES ON SOFTWARE INTEGRATION

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**ABSTRACT**
The strategy represents in a general way "a well-defined and structured set of fundamental long-term objectives, together with allocated resources and the ways these can be used effectively in accordance with established goals, in order to obtain better competitive results." Software integration is not a new concept as it has been addressed from the moment the companies had no more than two systems and a network connection. The problem of integrating applications at company level has become very important, with direct effects on the work of any economic society. As such, the specialists in the field developed true strategies for addressing and solving the integration of information systems.

**Keywords**: Integration software, Vertical integration, Horizontal integration, Integration mixed, Business Process Oriented.

# STANDARDS IN CONTROL AND PROTECTION TEHNOLOGY FOR ELECTRIC POWER SYSTEMS

Daniel COSTIANU[1], Nicoleta ARGHIRA[2],
Ioana FĂGĂRĂŞAN[3], Sergiu St. ILIESCU[4]

**Abstract**

*The features of the standard IEC 16850 with respect to intelligent applications in substations are summarized. It is shown how modeling of functions independently from its allocation to devices allows optimizing existing applications and opening up for future intelligent applications. The data model provides all information in a substation needed not only for control and protection functions but also about the IEDs and the switchgear configuration.*

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# System Requirements Analysis for e-learning systems using grid

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***Abstract***: Until recent years network-based education and grid technologies were two distinct areas. But e-learning systems have been increasingly addressing learning resources sharing (text, images, video, on-line data, etc.) and reuse, interoperability and other more different modes of interactions. E-learning systems consist of complex activities and most of them have been designed based on client-server or peer to peer, and recently web services architecture. These systems have major drawback because of their limitations in scalability, availability, distribution of computing power and storage systems, as well as sharing information between users that contribute to these systems. In this context the use of grid technology reveals its utility and availability, as scalable, flexible coordinated and secure resource sharing among geographically distributed individuals or institutions, in the perspective of e-learning.

*Key-words*: networked-based, education, grid technologies, e-learning systems,resouce sharing, interoperability, standardisation.

# VIRTUAL EDUCATION

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**ABSTRACT**

The internet economy is strongly connected with its developing modalities. A society desiring to be developed must be initially educated, in order to understand the benefits of the new modality of social integration. The practical finality of the "e" phenomenon in the educational field is the application of an eLearning system**.**

# Features Concerning Competitive Performance Measurement

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**ABSTRACT:** Innovation and competitiveness are the main vectors of social-economic progress of every country. Starting from this general context and considering the particular context wherein Romania is, which strongly impose the growth of economic competitiveness for realize the convergence to EU countries, in this item we propose to put in evidence the kinds of competitive performance measurement. For this, we'll study from economic development point, competitiveness index contained in Global Competitiveness Report of World Economy Forum (WEF). We'll also comparatively show features linked to the index elaborated by the Institute of Management Development (IMD) in Global Competitiveness Report.

**Keywords:** competitiveness, innovation, creativity, competitiveness indices

# Dematerialized Monies – New Means of Payment

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**ABSTRACT:** In this paper, we will outline the financial context in which the main means of payment dematerialization occurs. We will present the main characteristics of these new types of dematerialized monies: electronic money, virtual money, digital money, private money, purses and holders.

**Keywords**: means of payment, dematerialized monies: electronic, virtual, digital, private, purses and holders.

# TECHNIQUES OF ANALYSIS AND DIAGNOSTICS OF THE COMPANIES ON THE BASIS OF FINANCIAL INDEX

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**Abstract**

Not only banks do that and all the non-financial firms who want to check the solvability of a company. In this way there were created the scoring models. These models help the decided factors from a company to classify the companies and, depending of the score, to give or not the loan.

# Robust Monetary Policy

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**ABSTRACT:** While there is uncertainty about the data that enter into economic models and about the parameters that govern economic models, the fact that economists often approach macroeconomic data armed with different models of the economy suggests that uncertainty, or ambiguity, about the model could also be potentially important. A policy can be made "robust" to model uncertainty by designing it to perform well on average across all of the available fully specified models rather than to reign supreme in any particular model. In this paper we compare the implications of robust monetary policy versus non robust monetary policy for a model based on a new Keynesian model with two equations that represent the dynamics of inflation and the dynamics of the output gap. Using Matlab, we are able to approximate the solution to the linear–quadratic problem associated with the estimated model, thus obtaining the optimal monetary policy decision.

# INTELLIGENT VEHICLE SAFETY SYSTEMS-eCALL

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**ABSTRACT**

The European Union is promoting *eCall* to reduce the number of roadway fatalities by minimizing the response time when an accident has occurred. *eCall* is a combination of an In Vehicle System (IVS), a device with a GSM cell phone and GPS location capability, and a corresponding infrastructure of Public Safety Answering Points (PSAPs) Intelligent Vehicle Safety Systems use Information and Communications Technologies for providing solutions for improving road safety in particular in the pre-crash phase when the accident can still be avoided or at least its severity significantly reduced.With these systems,which can operate either autonomously on-board the vehicle, or be based on vehicle-tovehicle or vehicle-to-infrastructure communication (co-operative systems), the number of accidents and their severity can be reduced. Location-enhanced emergency calls like in-vehicle e-Call have their primary benefit to society of saving lives and in offering an increased sense of security. The articol presents the system eCall and how does it work.

**Keywords:** eCall, functional architecture, PSAP

# An INTRODUCTION TO CUDA Programming

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**Abstract**. The graphics boards have become so powerful that they are usded for mathematical computations, such as matrix multiplication and transposition, which are required for complex visual and physics simulations in computer games. NVIDIA has supported this trend by releasing the **CUDA** (Compute Unified Device Architecture) interface library to allow applications developers to write code that can be uploaded into an NVIDIA-based card for execution by NVIDIA's massively parallel GPUs. This paper is an introduction to the CUDA programming based on the documentation from [2] and [4].

# INTRODUCTION TO ZEND FRAMEWORK

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**ABSTRACT**

*A **software framework** provides the skeleton of an application that can be customized by an application developer. Like software libraries, software frameworks aid the software developer by containing source code that solves problems for a given domain and provides a simple API. However, while a code library acts like a servant to other programs, software frameworks reverse the master/servant relationship. This reversal, called inversion of control, expresses the essence of software frameworks.*

*A **web application framework** is a software framework that is designed to support the development of dynamic websites, Web applications and Web services. The framework aims to alleviate the overhead associated with common activities used in Web development. For example, many frameworks provide libraries for database access, templating frameworks and session management, and often promote code reuse.*

# Decision support systems

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**ABSTRACT:** Decision Support Systems (DSS) are a specific class of computerized information system that supports business and organizational decision-making activities. A properly-designed DSS is an interactive software-based system intended to help decision makers compile useful information from raw data, documents, personal knowledge, and/or business models to identify and solve problems and make decisions. DSS belong to an environment with multidisciplinary foundations, including database reasearch, artificial intelligence, human computer interaction, simulation methods, software engineering and telecomunication.

**Keywords**: decision support system, decision makers, computer-based

# Time Delays and The Underwriting Cycle

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**ABSTRACT:** We shall consider the concept of time delays and the extent to which this is a common feature in many general insurance systems. We shall then present an example of a model of an insurance system with delays that helps to explain the phenomenon of underwriting cycles.

**Keywords**: insurance, time delays, underwriting cycle, forecasting, rating formula.

# Power plants automation and control using PLC tehnology

Costianu Daniel Razvan[1], Arghira Nicoleta[2], Ioana Fagarasan[3], Sergiu Stelian Iliescu[4]

*Abstract: This paper describes the Advanced System Simulator ASIMA that uses a microprocessor for its internal functions. In the existing configuration, a Siemens Simatic S7 300 is used to study different the control functions. The automatic operating of a Conveyor Charging System is illustrated in the paper taking in account the control scheme..*

# DIAGRAMS, FUNCTIONAL AND CONSTRUCTIVE SOLUTIONS OF THE STABILITY CONTROL SYSTEMS FOR AUTOMOTIVE APPLICATION

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***Abstract:*** *The modern car must correspond to certain requirements regarding the driver safety and more than that it must convince the potential buyer that it will offer him the safety he is so much in need of. For that reason the number and the diversity of the safety systems have increased so fast. Despite all this for the time being it can not be stated that a particular vehicle is totally safe and it can come through any difficult situation. Because of that the research in the field is carried on and the number of those who propose solutions mend to improve the vehicle behavior is getting bigger.*

**Key words: active safety, vehicle, control**

# RESOLVING THE CIRCULATION OF INTERN PAPER WORK AND MANAGING INFORMATION WITH DATABASE APPLICATION FOR THE PERSONAL TRAINING SECTOR

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❖ **Abstract**

S.C. Formenerg S.A. is a training firm that organizes courses especially for the people working in the Romanian National Energetic System. It offers a variety of training courses from a variety of fields like management, marketing, maintenance and repair, projection and designing of electrical systems, marketing, IT, PR, foreign languages.

# The Hachemeister's Algorithm for Heterogenous Portofolios

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and
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***ABSTRACT:*** *The Hachemeister's model is based on an econometric essence combined with one of numeral analysis, both applied on goods insurance. The specific feature of using this type of numeral analysis model given other types of model for premium establishment is the fact that takes in consideration both the evolution in time of contracts number and of inflation's effect over the value of demands showed during time and also the fact that it can be applied succesfully where we have to provide for an heterogenous risks portofolio.*

***Keywords: heterogenous portofolios, theory of credibility, risk premiums***