

# Preface

The current issue of the journal contains six extended papers published in the “Proceedings of the „International Conference on Computers and Communications, May 27 – 29, 2004, Baile Felix Spa – Oradea, Romania, (ICCC 2004)” (I. Dziřac, T. Maghiar, C. Popescu eds. and H. Oros tech. ed.).

The ICCC 2004 was organized by University of Oradea (Department of Mathematics and Department of Computers) and ROMAI - Oradea branch. It provided a forum for scientists in academia and industry to present and discuss their latest research findings on a broad array of topics in computer science and data communications. The scope of the conference covered the following topics: Parallel Computing, Cryptography and Security, Artificial Intelligence and Applications, Internet Services and Applications, Network Design, Electronic Commerce, Software Design, Natural Computing, Information Society/ICT Skills and Qualifications, Mobile Communications, Automata and Formal Languages, Parallel and Distributed Algorithms, Multimedia Communications and Systems, Distributed Database Systems, Symbolic and Numeric algorithms, Computational Mathematics and Parallel Processing in Computational Mathematics.

The international program committee received 112 submissions, originating from Australia, Austria, China, Egypt, Finland, France, Germany, Greece, India, Ireland, Italy, Japan, Moldova, Romania, Spain, United Kingdom, USA. Each submission was reviewed by two program committee members or other experts. Out of the 112 papers received, only 67 were accepted (59.8%).

Invited papers presented to ICCC 2004 were: “Algebraic Tool for Fuzzy Logic” (A. Di Nola); “Learning New Computing Models from Biology: Membrane Computing” (G. Păun); “European Qualification Strategies in Information and Communications Technology (ICT)” (W. Petersen); “Dynamic Computers, Artificial Life and Communications” (H.N. Teodorescu).

The Romanian Academy contributed to the success of the ICCC 2004 by providing professional and technical consultancy and moral support to the principal organizer I. Dziřac. We would like to express our gratitude to Acad. M. Drăgănescu, Member of the Presidium of the Romanian Academy, President of Section for the Science and Technology of Information; Acad. F. G. Filip, Member of the Presidium of the Romanian Academy, Vice-President of the Romanian Academy; Dr.G. Păun, Corresponding Member of the Romanian Academy; Prof. Dr. H. N. Teodorescu, Corresponding Member of the Romanian Academy.

After a selection made by the section chairs and supplementary reviews, we selected 7 papers for publishing here in extended form:

1. A Framework for Student Knowledge Evaluation in Internet Environments, Florin Bota, Politecnico di Torino, Italy.
2. Generalized Decision Trees Built With Evolutionary Techniques, D. Dumitrescu and Joo Andras, Babes-Bolyai University, Cluj and Sapientia University, Targu Mures, both from Romania.
3. Incidence of new telematic systems for transports in Romanian information society, Marius Minea, Gheorghe Stan, Florin Codruř Nemřanu, Politehnica University of Bucharest, Romania.
4. An Extension of Maple for Grid and Cluster Computing, Petcu Dana and Dubu Diana, Western University of Timiřoara and Institute e-Austria in Timiřoara, both from Romania.
5. European Qualification Strategies in Information and Communications Technology (ICT) - Towards a European (reference) ICT Skills and Qualification Framework, A. Willi Petersen and Carsten Wehmeyer, University of Flensburg, both from Germany.
6. Constraint-Oriented Object Behavior Specification in Real-Time Control, Doina Zmaranda and Gianina Gabor, University of Oradea, Romania.

We now present an introduction of these papers.

## Introducing the papers

Florin Bota’s paper presents some considerations on knowledge evaluation in e-learning environments. The first part contains a general presentation of the necessity of automated knowledge evaluation in e-learning systems, different evaluation methods that can be used for implementation as well as advantages and drawbacks for the students and professors in using such a system. The second part presents a possible implementation, describing different original exercise types and presenting two possible implementations self-evaluation client-side library and as a web application.

D. Dumitrescu and Joo Andras propose a new decision tree type: generalized decision tree. These trees contain completely generalized tests in their internal nodes, hence they describe much better the data than their traditional counterparts. An evolutionary method to build such decision trees is presented.

Marius Minea, Gheorghe Stan and Florin Codruț Nemțanu's paper present the incidence of Intelligent Transport Systems in Romanian information society, in accordance with EU policies for candidate countries, with reference to a dedicated solution, result of a local research process.

Dana Petcu and Diana Dubu's paper designs a specific tool which links Maple's interface to grid services or different Maple kernels thus forming a virtual parallel computing environment. Behind it are Globus, the standard for grid computing, and mpiJava, a package for message passing programming on parallel or cluster architecture. Also, they give a shortly description on the extension design principles and its functionality.

A. Willi Petersen and Carsten Wehmeyer's paper presents the industry's ICT skills needs. Innovative ICT developments are changing society to an 'information society' and new opportunities and challenges in all areas of work and life have arisen. In particular, this applies to ICT research, business and work itself. Highly skilled ICT practitioners are needed to manage business and work processes in both the core ICT sector and in industries using ICT. To understand, produce and use the new information and communications technology there is a widespread need to possess a range of ICT competences. One of the major challenges for any types of (formal and informal) skills and qualification development arrangements is to adequately guaranty the supply of ICT practitioners. This, in turn, makes demands on the various provisions of higher education and vocational education and training as well as requiring tailored offers for continuing vocational education and training and lifelong learning.

Doina Zmaranda and Gianina Gabor investigate in their paper the relevant aspects that should be considered when applying object-oriented issues to real-time systems development, emphasizing the improvements needed for specifying object behavior in a real-time control system. The identified concepts were illustrated using a simple and practical example.

We would like to thank acad. F.G. Filip, editor in chief of Studies in Informatics and Control Journal, for invitation and hosting the above mentioned papers.

**I. Dzițăc, T. Maghiar, H. Oros and C. Popescu,**  
Guest editors