Editors: Nikos E. Mastorakis, Valeri Mladenov

Advances in Data Networks, Communications, Computers

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CENTRO DE INVESTIGAÇÃO SOBRE ESPAÇO E ORGANIZAÇÕES

9th WSEAS International Conference on DATA NETWORKS, COMMUNICATIONS, COMPUTERS (DNCOCO '10)

University of Algarve, Faro,
Portugal, November 3-5, 2010

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Preface

This year the 9th WSEAS International Conference on DATA NETWORKS, COMMUNICATIONS, COMPUTERS (DNCOCO '10) was held at the University of Algarve, Faro, Portugal, November 3-5, 2010. The conference remains faithful to its original idea of providing a platform to discuss network architecture, network design, synchronous networks, mobile networks and mobile services, peer to peer communication protocols, data engineering, knowledge engineering information security, risk analysis, anonymity techniques, software maintenance, intellectual property, wireless communications, microwave theory and techniques, microwave propagation, electromagnetic compatibility problems, applied electromagnetics, aerospace systems, video systems, programming languages, high performance languages, operating systems, hardware engineering, digital speech processing, computer networks, microelectronics, mobile computing, artificial intelligence, modelling and simulation, law aspects related to informatics etc. with participants from all over the world, both from academia and from industry.

Its success is reflected in the papers received, with participants coming from several countries, allowing a real multinational multicultural exchange of experiences and ideas.

The accepted papers of this conference are published in this Book that will be indexed by ISI. Please, check it: www.worldses.org/indexes as well as in the CD-ROM Proceedings. They will be also available in the E-Library of the WSEAS. The best papers will be also promoted in many Journals for further evaluation.

A Conference such as this can only succeed as a team effort, so the Editors want to thank the International Scientific Committee and the Reviewers for their excellent work in reviewing the papers as well as their invaluable input and advice.

The Editors

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Plenary Lecture 1

Large-Scale Ambient Intelligence

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Abstract: According to a common understanding, Ambient Intelligence (AmI) aims to make digital devices so embedded and natural that we use them without even thinking about them. This emergence has been naturally paved by the research and technological advances in wireless sensor networks, embedded systems, mobile computing, distributed computing and communication. There is a number of recent applications, mostly intended for upgrading the intelligence of interior – intelligent homes, health care in hospitals or houses for elderly, intelligent classrooms, offices. However, it is also possible to think about large-scale ambient intelligence implementations, going outside the homes, outside internal spaces, into the environment, beyond the geographically restricted scenarios.
The notion large-scale ambient intelligence was used already in such a sense, where the users are able to acquire whatever, whenever and wherever. This would realistically allow to be truly mobile and allow the resources to be truly distributed (and thus ambient), rather than carrying out intelligent gadgets along with users. That is, in addition to incorporating intelligence in sensor nodes within a sensor network, the idea of large-scale ambient intelligence proposes to take this vision to the next level where these geographically distributed intelligent sensor networks become intelligent sensor resources that are accessible to the users anytime-anywhere.
In our talk we wish to bring an overview of recent activities and research in the area of large-scale ambient intelligence, including also some ideas about possible applications, namely in various environmentally sensitive cases. As an example we shall mention possible applications for such areas as water management, forests management, or disaster prevention. A number of recent approaches and a couple of recent interesting results in this challenging area will be presented as well.

Brief Biography of the Speaker: Prof. Dr. Peter Mikulecky is a professor of Managerial Informatics at the Faculty of Informatics and Management at the University of Hradec Kralove, Czech Republic, since 1993. He have been the head of the Department of Information Technologies since 1994, recently he acts also as Director for Research and Director of Postgraduate Studies at the same faculty. In the period of 1990 to 1993 he was the head of Department of Artificial Intelligence, Faculty of Mathematics and Physics at the Comenius University in Bratislava, Slovakia, where he worked in various positions since 1973. Recently he is also a member of the Accreditation Commission of the Government of Slovak Republic (since 2004) responsible for accreditations of Slovak higher educational institutions. Research of Professor Mikulecky covers ambient intelligence, artificial intelligence, knowledge-based systems and technologies, knowledge management, as well as human – computer interaction. He has published more than 150 papers in various journals and conference proceedings in these areas, as well as a number of books and book chapters. He was one of the founders of a regular series of events called Ambient Intelligence Forum; he is also a member of programme committees for a number of international conferences. Professor Mikulecky is also a member of a number of scientific societies and scientific boards.

Plenary Lecture 2

How to Model Software Generator for Information System in Order to Support Normative Organizational Activities

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Abstract: This session will describe concept of normatively regulated activities and their basic concept. Normatively regulated activities are characterized by precise objective or purpose, participation of actors as role-holders, and norms and rules that govern the performance of these activities. They are typically found in insurance companies, banks, courts and many public administrations. In order to perform normatively regulated activities efficiently and effectively, actors need proper information and documents, but also have to act in accordance with relevant norms and rules. The performance of activities in accordance with norms and rules makes them normatively or legally correct and vice versa. Therefore, computerized support for this class of activities should also include, besides information processing and dissemination, support for taking actions in accord with applicable norms and rules. The main goal of the software systems in support of normatively regulated activities is increased efficiency and effectiveness, but also increased consistency in interpretation and application of norms and rules, and thus increased legitimacy of their performance. Aspects of the normatively regulated organizational activities and approach to make model of normatively regulated activities, which are bases for building software systems to support their performance, are also described. Some aspects of object view on normatively regulated activities will be described, with particular case of procurement activity and IT service management.

Brief Biography of the Speaker: Dzenana Donko received M.Sc. degree in Computer Science from the University of Sarajevo, BiH at the Faculty of Electrical Engineering in 1994 and Ph.D. degree in Computer Science at the same University in 2004. She is currently an associated professor at the University of Sarajevo where she teaches various subjects on computer science. Besides being an author and co-author of numerous papers with special aspect of business intelligence and published book "Object Oriented Analysis and Design", she is also member of the organizing committee and review of several international conferences. She was consultant on several projects for United Nations Development Project for digital government processes. Her research interest includes object oriented analysis and design, programming languages, web architectures and web programming, workflow management, system analysis and design, and service management.

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