

*Proceedings*

6th International Conference on  
COMPUTER INFORMATION SYSTEMS AND  
INDUSTRIAL MANAGEMENT APPLICATIONS

**CISIM 2007**



# *Proceedings*

## 6th International Conference on COMPUTER INFORMATION SYSTEMS AND INDUSTRIAL MANAGEMENT APPLICATIONS

# **CISIM 2007**

*Elk, Poland*

*28–30 June 2007*

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# Foreword

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The writing of a foreword to the proceedings of a conference is a special undertaking. First of all, a person invited is greatly honored and pleased because such an invitation is a clear sign that his or her work and commitment to the area are recognized by the scientific community. Second, it means that the community — through the proper program, steering, etc. committee of a particular scientific event – is convinced that he or she is in a position to view both the area and a particular formula of the conference in a proper perspective, being able to objectively view the choice of the formula and topics, program committee members, audience, etc.

First, let me say that by looking at the formula of CISIM 2007, I have been able to appreciate it more and more. In general, we all know that there are hundreds, maybe thousands, of conferences of various aspects of information technology and information systems, on the one hand, and management, notably production management, on the other hand. So, what is so special about this conference? In my opinion, before coming to a more detailed indication of those characteristic features that are so unusual, we should point out two aspects. The first one is related to the organizers. They are probably the perfect combination that can be had. There is a research arm, one of top research institutes of the Polish Academy of Science. Then, there are two prominent universities of technology, a small but very fine university of technology in Poland with a computer science department that has already gained a high reputation in Poland and elsewhere, and a well known university of technology in Finland which is known for being one of the top players on the high tech research market in a country known for its innovative approach to higher education, research and technology, and to an efficient systems of technology transfer from the academia to the industry. Finally, there is a private school of management that has already gained a high stature in the Polish higher education system in spite of the fact that it has existed for a couple of years only.

The above synergistic combination of the organizers, which constitutes a special quality by itself, has been amplified by a very ingenious choice of topics, and then the participants. On the one hand, the choice of streams, one related to computer information systems and the other related to industrial management follows very well the formula of the conference. What is relevant is that, within the computer information systems stream, the choice of topics is very good too. Namely, fields like signal analysis, biometrics and image analysis, computer graphics and vision, object classification and recognition, artificial intelligence, computer simulation, computer security and safety, etc. are at the forefront of the theoretical and applied research and are viewed crucial for virtually all real world applications.

On the other hand, within the industrial management stream, areas like: business strategy, product development, production and operation management, productivity and quality, supply chain management, organization culture, management accounting, etc. are what really matters in that field, both from a theoretical and practical point of view.

A proper choice of topics has clearly implied, first, the keynote speakers, and then the response to the call for papers that has resulted in many interesting contributions. The choice of keynote and other invited presentations is very important, and at CISIM 2007 the organizers have succeeded in gathering a very distinguished group of prominent speakers both from Poland and other countries from virtually all continents. What is ever more relevant, the topics concern issues that are at the forefront of research in the fields of the conference. They include use of modern data analysis and knowledge discovery tools and techniques, decision support systems, knowledge acquisition, representation and understanding, agent technology, security and safety, graphical user interfaces, Web intelligence, new and biologically inspired computing paradigms, biometric analyses, cryptography, intelligent systems, robotics, etc.

These are other, more specific topics that have been discussed in technical papers, and many of them have clearly indicated potentials of using these modern tools and techniques for solving a multitude of theoretical and practical problems of broadly perceived industrial management.

To summarize, one should greatly appreciate the idea and formula of the CISM 2007 conference, mostly in terms of a proper choice of topics, keynote speeches and technical contributions, and — last but not least — the choice of the venue: a relatively small but fine town that provides a quite atmosphere for fruitful and vivid discussions.

The chairpersons, steering committees, program committee and organizers deserve applause and gratitude from the entire research and scholarly community for this successful event and its proceedings.

*Janusz Kacprzyk*  
Fellow of IEEE

Warsaw, April 2007

# CISIM 2007 Steering Committee Chair's Message

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On behalf of the 6th Computer Information Systems and Industrial Management Applications (CISIM 2007) steering committee, I wish to extend a very warm welcome to the conference in Elk in June 2007. The conference program committee has organized an exciting and invigorating program comprising presentations from distinguished experts in the field and important and wide-ranging contributions on state-of-the-art research that provide new insights into 'Current Innovations in Information Systems and Management Applications'. CISIM 2007 is organized by the Faculty of Computer Science, Bialystok Technical University; Institute of Computer Science, Polish Academy of Sciences, Warsaw; Computer Science Department, The University of Finance and Management in Bialystok and the Lappeenranta University of Technology, Finland.

The main themes addressed by this conference are:

## **Computer Information Systems**

Signal and Image Analysis  
Computer Graphics and Vision  
Object Classification and Recognition  
Artificial Intelligence  
Computer Security and Safety  
Medical, Multimedia, Industrial  
and other Applications

## **Industrial Management**

Business Strategy  
Product Development  
Management Accounting  
Organization Culture  
Production / Operations Management  
Productivity and Quality  
Supply Chain Management

The conference program committee had a very challenging task of choosing high quality submissions. Each paper was peer reviewed by at least two independent referees of the program committee and based on the recommendation of the reviewers 60 papers were finally accepted. CISIM 2007 also features 12 keynote presentations delivered by distinguished experts in the field. The papers offers stimulating insights into emerging information system development and their applications in digital information management, Internet security, data mining, image processing, optimization, and so on.

I would like to express my sincere thanks to all the authors and program committee that have made this conference a success. Finally, I hope that you will find these proceedings to be a valuable resource in your professional research, and educational activities whether you are a student, academic, researcher, or a practicing professional. Enjoy!

*Khalid Saeed*  
CISIM 2007 Steering Committee Chair

# Organization

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