

## Preface

*Verba volant, scripta manent !*

The "International Journal on Information Theory and Applications" (IJ ITA) has been established in 1993 as independent scientific printed and electronic media. IJ ITA is edited by the *Institute of Information Theories and Applications FOI ITHEA* in collaboration with the leading researchers from the Institute of Cybernetics "V.M.Glushkov", NASU (Ukraine) and Institute of Mathematics and Informatics, BAS (Bulgaria).

During the years, IJ ITA became as well-known international journal. Till now, including this volume, more than **350** papers from more than **600** authors have been published. IJ ITA authors are widespread in **38** countries all over the world: **Armenia, Belarus, Belgium, Bulgaria, Canada, Czech Republic, Denmark, Egypt, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Japan, Kirghizia, Latvia, Lithuania, Malta, Mexico, Moldavia, Netherlands, Poland, Portugal, Romania, Russia, Scotland, Senegal, Serbia and Montenegro, Spain, Sultanate of Oman, Turkey, UK, Ukraine, and USA.**

**Volume 11/2004** of the IJ ITA contains **59** papers written by **115** authors from **24** countries (*marked in italics above*), selected from several international conferences, seminars and workshops organized or supported by the Journal.

At the first place, the main source for selection were the **ITA 2004** Joint International Events on Information Theories and Applications, (June 14-24, 2004, Varna, Bulgaria):

- Second International Conference i.TECH 2004 "Information Research, Applications and Education",
- XXIX-th International Conference ICT&P 2004 "Information and Communication Technologies & Programming",
- III-th International Workshop on General Information Theory,
- International INTAS-FET Strategic Workshop "Data Flow Systems: Algorithms and Complexity",
- Second International Workshop on Multimedia Semantic.

A special issue (No.3) of this volume contains papers from the International Seminar "Digitization of Cultural and Scientific Heritage" (27.08 – 03.09.2004, Bansko, Bulgaria).

Several papers were selected from the pool of papers directly submitted to IJ ITA.

Congratulations to *Mr. Tibor Vámos* and *Mr. Boicho Kokinov* who were awarded by the International Prize "**ITHEA**" for the year 2004. The "ITHEA" Prize has been established in 1995. It is aimed to mark the achievements in the field of the information theories and applications.

More information about the IJ ITA rules for preparing and submitting the papers as well as how to take out a subscription to the Journal may be obtained from [www.foibg.com/ijita](http://www.foibg.com/ijita).

**Krassimir Markov**

*IJ ITA Founder and Editor in chief*



## International Prize "ITHEA"

### Awarded Scientists till 2004:

|      |              |   |
|------|--------------|---|
| 1995 | Sandansky    | K. Bankov, P. Barnev, G. Gargov, V. Gladun, R. Kirkova, S. Lazarov, S. Pironkov, V. Tomov |
| 1996 | Sofia        | T. Hinova, K. Ivanova, I. Mitov, D. Shishkov, N. Vashchenko                               |
| 1997 | Yalta        | Z. Rabinovich, V. Sgurev, A. Timofeev, A. Voloshin  |
| 1998 | Sofia        | V. Jotsov   |
| 1999 | Sofia        | L. Zainutdinova   |
| 2000 | Varna        | I. Arefiev, A. Palagin  |
| 2001 | St.Peterburg | N. Ivanova, V. Koval  |
| 2002 | Primorsko    | A. Milani, M. Mintchev  |
| 2003 | Varna        | T. Gavrilova, A. Eskenazi, V. Lozovskiy, P. Stanchev                                      |
| 2004 | Varna        | B. Kokinov, T. Vamos  |

### IJ ITA major topics of interest include, but are not limited to:

#### INFORMATION THEORIES

|                                     |   |
|-------------------------------------|---|
| Artificial Intelligence             | Education Informatics                     |
| Computer Intellectualisation        | General Information Theory                |
| Intelligent Networks and Agents     | Hyper Technologies                        |
| Intelligent Technologies            | Information Models                        |
| Knowledge Discovery and Engineering | Intellectualisation of Data Processing    |
| Knowledge Acquisition and Formation | Knowledge-based Society                   |
| Distributed Artificial Intelligence | Logical Inference                         |
| Models of Plausible Reasoning       | Natural language Processing               |
| AI Planning and Scheduling          | Neuroinformatics                          |
| Bioinformatics                      | Philosophy and Methodology of Informatics |
| Business Informatics                | Quality of the Programs                   |
| Cognitive Science                   | Software Engineering                      |
| Decision Making                     | Theory of Computation                     |

#### APPLICATIONS

|                                 |  |
|---------------------------------|--|
| Business Information Systems    | Multimedia Systems                           |
| Communication Systems           | Programming Technologies                     |
| Computer Art and Computer Music | Program Systems with Artificial Intelligence |
| Hyper Technologies              | Pyramidal Information Systems                |
| Intelligent Information Systems | Very Large Information Spaces                |