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Bruno Apolloni Robert J. Howlett
Lakhmi Jain (Eds.)

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Preface

These three volumes are a collection of the contributions presented to the joint conferences of KES 2007, the 11th International Conference on Knowledge-Based and Intelligent Information and Engineering Systems, and the WIRN 2007, the 17th Italian Workshop on Neural Networks, held in Vietri sul Mare, Italy, in September 2007.

The formula by which KES conferences gather over 500 people each year from the four corners of the globe to discuss the topic of knowledge-based and intelligent information and engineering systems is: an open mind with rigor. Within the vast universe of the conferences centered around the keywords “information” and “computational intelligence,” we encourage in our meetings the offering of new ideas and techniques to give solutions to the never-ending series of problems and challenges that our own intelligence poses.

As a precious attribute of the human brain, we will never be disturbed by the novelty, and possibly the provocation, of new mental paradigms and hazardous conjectures, especially if they are raised by fresh research teams. At the same time, we have riddled each contribution using the sieve of scientific quality, checking the rigor with which the ideas are illustrated, their understandability and the support of the theory or of the experimental evidence.

The structure of the conference reflects this philosophy. In addition to regular tracks on the main fields of the discipline, we invited scientists to propose sessions focused on topics of high interest. Their response was generous and based on all sources, we received some 1203 submissions. From this number we collected 11 general track sessions and 47 invited sessions to make a total of 409 papers after a severe referee screening, an acceptance rate of 34%. Thus the reader may have from these volumes an almost exhaustive overview of researcher’s and practitioner’s current work in the field of information extraction and intelligent systems.

WIRN 2007 was the annual meeting of the Italian Society for Neural Networks (SIREN). Joining the two conferences provided the double benefit of giving the meeting a qualified and interested local committee on the one hand, and putting the local scientific community in touch with an international cluster of researchers in similar fields, on the other. The efficiency and effectiveness of the result suggest that it would be beneficial to replicate this formula in the future.

We wish to express our sincere thanks to many people who worked hard for the success of the conference, to the authors who sent their contributions, and to the whole scientific community who contributed to intelligence and knowledge values being preserved and enhanced for future generations.

September 2007

Bruno Apolloni
Robert J. Howlett
Lakhmi C. Jain

Organization

KES 2007 was organized by KES International – Innovation in Knowledge-Based and Intelligent Engineering Systems. WIRN 2007 was organized by IIASS – Istituto Italiano Alti Studi Scientifici.

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Web Intelligence, Text and Multimedia Mining and Retrieval

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Artificial Intelligence Methods for Information Processing (AIMIP 2007), *Lifeng Xi, Jifang Li, Kun Gao (Zhejiang Wanli University, Ningbo, China)*

- Communicative Intelligence 2007, *Toyoaki Nishida (University of Kyoto, Japan)*
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- Computation Intelligence for Image Processing and Pattern Recognition, *Yen-Wei Chen (Ritsumeikan University, Nojihigashi, Japan)*
- Human Computer Intelligent Systems, *Takumi Ichimura, Kazuya Mera (Hiroshima City University, Japan)*
- Hybrid Artificial Intelligence Systems Workshop (HAIS 2007-KES2007), *Juan M. Corchado (University of Salamanca, Spain)* *Emilio Corchado (University of Burgos, Spain)*
- Innovations in Intelligent Data Analysis, *Mika Sato (University of Tsukuba, Japan)* *Lakhmi Jain (University of South Australia, Australia)*
- Intelligent Agents and Their Applications, *Dharmendra Sharma, Wanli Ma (University of Canberra, Australia)*, *Haeng Kon Kim (Catholic University of Daegu, Korea)*
- Intelligent and Adaptive Systems in Economics, Finance and Management, *Marco Corazza (University Ca' Foscari, Venice)* *Norio Baba (Osaka Kyoiku University, Japan)*
- Intelligent Automation Systems, *MuDer Jeng (National Taiwan Ocean University)*
- Intelligent Control Theory and Applications, *Kazumi Nakamatsu (University of Hyogo, Japan)* *Scheng-Luen Chung (National Taiwan University of Science and Technology)*
- Intelligent Data Processing in Process Systems and Plants, *Tetsuo Fuchino (Tokyo Institute of Technology, Japan)* *Yoshiyuki Yamashita (Tohoku University, Japan)*
- Intelligent Mechanism for Knowledge Innovation, *Toyohide Watanabe (Nagoya University)* *Teketoshi Ushima (Kyushu University)*
- Intelligent Multimedia Solution and Security in the Next-Generation Mobile Information Systems (IMSS), *Dong Chun Lee (Howon University, Korea)* *Hyun-cheol Kim (Namseoul University, Korea)*
- Intelligent Techniques for Biometric-Based Authentication, *Ernesto Damiani, Antonia Azzini, Stefania Marrara (University of Milan, Italy)*
- Logic-Based Intelligent Information Systems, *Kazumi Nakamatsu (University of Hyogo, Japan)*
- Chance Discovery, *Akinori Abe (ATR Knowledge Science Laboratories, Japan)* *Yukio Ohsawa (University of Tokyo, Japan)*
- Knowledge-Based Interface Systems I, *Naohiro Ishii (Aichi Institute of Technology, Japan)* *Yuji Iwahori (Chubu University, Japan)*
- Knowledge-Based Interface Systems II, *Yoshinori Adachi (Chubu University, Japan)* *Nobuhiro Inuzuka (Nagoya Institute of Technology, Japan)*

Knowledge and Information Management in a Social Community, *Toyohide Watanabe (Nagoya University, Japan) Naoto Mukai (Tokyo Science University, Japan) Jun Feng (Hohai University, China)*

Knowledge and Ontological Engineering for Intelligent Information System Development (KOS), *Tatiana Gavrilova (St. Petersburg State Polytechnic University, Russia) Vyacheslav Shkodyrev (Polytechnic of St. Petersburg, Russia)*

Knowledge Engineering in Multi-Robot Systems, *Manuel Graa, Richard Duro (Universidad del Pais Vasco, Spain)*

Knowledge-Based Creativity Support Systems, *Susumu Kunifuji, Motoki Miura (JAIST, Japan) Kazuo Misue (Tukuba University, Japan)*

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Learning from Uncertain Data, *Dario Malchiodi (University of Milan, Italy)*

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Neural Networks: Advanced Applications, *Eros Pasero (University of Turin, Italy)*

Soft Computing Approach to Management Engineering, *Junzo Watada (Waseda University, Japan) Huey-Ming Lee (Chinese Culture University, Taiwan) Taki Kanda (Bunri University of Hospitality, Japan)*

Soft Computing in Electromagnetic Applications, *Raffaele Martone (University of Naples, Italy)*

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Behavior Support in Advanced Learning Collaborations, *Toyohide Watanabe, Tomoko Kojiri (Nagoya University, Japan)*

Context-Aware Adaptable Systems and Their Applications, *Phill Kyu Rhee (Inha University, Korea) Rezaul Bashar (Islamic University, Bangladesh)*

Engineered Applications of Semantic Web - SWEA, *Tommaso Di Noia, Eugenio di Sciascio (Politechnic of Bari, Italy) Giovanni Semeraro (University of Bari, Italy)*

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Immunity-Based Systems, *Yoshiteru Ishida (Toyohashi University of Technology, Japan) Giuseppe Nicosia (University of Catania, Italy)*

Interactive Visualization and Clustering, *Roberto Tagliaferri (University of Salerno, Italy)*

Multi-Agent Systems Design, Implementation and Applications, *Dharmendra Sharma, Bala M. Balachandran (University of Canberra, Australia)*

Multimedia Systems and Their Applications Focusing on Reliable and Flexible Delivery for Integrated Multimedia (Media 2007), *Yun Ji Na (Convergence Information Technology Research Center, Korea) Il Seok Ko (Dongguk University, Korea)*

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Skill Acquisition and Ubiquitous Human Computer Interaction, *Hirokazu Taki (Wakayama University, Japan) Satoshi Hori (Institute of Technologists, Japan)*

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Keynote Speakers

Jean-François Cardoso, École Nationale Supérieure des Télécommunications, France: *Independent Component Analysis: Concepts and Applications*

Stephanie Forrest, University of New Mexico, USA: *Self-Healing Systems and Autonomic Network Security*

Walter J. Freeman, University of California, Berkeley, USA: *Thermodynamic Model of Knowledge Retrieval in Brain Dynamics for Information Processing*

Mario Gerla, University of California, Los Angeles, USA: *Probing and Mining the Urban Environment Using the Vehicular Sensor Network*

Hans-Andrea Loeliger, ETH, Zurich, Switzerland: *The Factor Graph Approach to Model-Based Signal Processing*

Yoshiteru Ishida, Toyohashi University, Japan: *The Immune System Offered a Glimpse: What Makes Biological Systems Distinct from Artificial Ones*

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