

# Welcome from HIS 2007 Organizers

We are very pleased to once again welcome our colleagues to the Seventh International Conference on Hybrid Intelligent Systems (HIS'07) at Kaiserslautern, Germany, during September 17-19, 2007. The HIS series of conferences attracts a wide range of interests with the development of the next generation of intelligent systems and its various practical applications. A fundamental stimulus to the investigation of hybrid intelligent systems is the awareness in the academic communities that combined approaches will be necessary if the real challenges in artificial intelligence are to be solved. Current research interests in this field focus on integration of the different computing paradigms such as fuzzy logic, neuro-computation, evolutionary computation, probabilistic computing, intelligent agents, machine learning, and other intelligent computing frameworks. There is also a growing interest in the role of sensors, their integration and evaluation in such frameworks. The phenomenal growth of hybrid intelligent systems and related topics has created the need for this international conference as a venue to present the latest research. HIS'07 builds on the success of last year's. HIS'06, which was held in conjunction with the Fourth Conference on Neuro-Computing and Evolving Intelligence (NCEI '06) in Auckland, New Zealand, December 13-15, 2006, attracted participants from 15 countries. As evident from the general philosophy of HIS conferences, we have a focus on interdisciplinary approaches and the global strategy to bring together research scientists from the various disciplines related to hybrid intelligent systems. HIS'07, the Seventh International Conference on Hybrid Intelligent Systems addresses the following important themes:

- Novel & hybrid methods of soft computing, neural & evolutionary computing, signal & image processing
- Methodology & frameworks for automated HIS design
- HIS applications
- Evolving/adaptive HIS
- Intelligent Sensor systems
- Self-monitoring sensor systems
- Organic Computing systems
- Wireless intelligent sensor systems
- Distributed intelligent systems/sensor networks
- Bio-inspired HIS hardware

HIS'07 is technically co-sponsored by IEEE Systems Man and Cybernetics Society, Deutsches Forschungsinstitut für künstliche Intelligenz (DFKI), Fraunhofer Institut Techno- und Wirtschaftsmathematik (ITWM), the German Chapter of IEEE Computational Intelligence Society, the Arbeitskreis Bildanalyse und Mustererkennung Kaiserslautern (BAMEK), The World Federation on Soft Computing (WFSC), and Phytex Messtechnik GmbH.

The HIS'07 program committee represented 23 countries on 5 continents. All submitted papers were refereed by at least three independent referees and, in some uncertain cases the number of referees was up to four. Based on the referee's reports, the Program Committee selected 52 papers for oral presentation and 13 papers for poster presentation. We would like to thank the HIS'07 international program committee and the additional reviewers for providing the reviews in time.

HIS'07 also received four special session proposals, “Ambient Intelligence [at Home and Recreation]” proposed by the Priority Research Center on Ambient Intelligence at TU Kaiserslautern, “Interdisciplinary/Hybrid Approaches to Dependable and Flexible Networking” proposed by the Kyushu Institute of Technology and KDDI R&D Labs, Japan, “Embedded Neural Network Hardware” proposed by the ITG working group 8.4.9. Microelectronics for Neural Networks, and “Aspects of Image Processing: Theory, applications & computations” proposed by Fraunhofer ITWM. Four excellent tutorials will also be presented at the venue. Our special thanks also go to all the plenary speakers for providing the very interesting and informed talks to catalyze subsequent discussions.

Our special thanks to Ms. Lisa O’Conner of IEEE Computer Society Press for all the support and help related to the production of this important scientific work. Finally, we would like to express our sincere gratitude to all the authors and local organizing committees that have contributed towards the success of this conference. We look forward to seeing you in Kaiserslautern, Germany, during HIS’07.

### **General Co-chairs**

**Andreas König**

*University of Kaiserslautern, Germany*

**Mario Köppen**

*Kyushu Institute of Technology, Japan*

### **Program Co-chairs**

**Nikola Kasabov**

*KEDRI, Auckland University, New Zealand*

**Ajith Abraham**

*Norwegian University of Science and  
Technology, Norway*