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# Intelligent Data Engineering and Automated Learning – IDEAL 2007

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# Preface

After a vibrant and successful event in Burgos, Spain, last year, this year's international conference on Intelligent Data Engineering and Automated Learning—IDEAL 2007 (<http://events.cs.bham.ac.uk/ideal07/>)—was held in the second largest city of the UK, Birmingham. The IDEAL conference has become a unique multidisciplinary forum for researchers in both theoretical and practical aspects of learning and information processing, data mining, retrieval and management, bioinformatics and bio-inspired models, agents and hybrid systems, and financial engineering. A special feature of the IDEAL conferences is the cross-disciplinary exchange of ideas in emerging techniques and applications in these areas. Data engineering and associated learning paradigms are playing increasingly important roles in an increasing number of disciplines and fields. The multidisciplinary nature of contemporary research and modern technology is pushing boundaries and one of the principal aims of the IDEAL conference is to promote interactions and collaborations across disciplines.

This volume of *Lecture Notes in Computer Science* contains accepted papers presented at IDEAL 2007 held at the University of Birmingham, UK, during December 16–19, 2007. This year, the conference received over 270 submissions from around the world, which were subsequently peer-reviewed by the Programme Committee comprising leading scholars in the field. Each paper was rigorously reviewed by two reviewers and only papers that had received positive comments from both reviewers were accepted and included in the proceedings in order to maintain the highest quality of the conference. This resulted in about 110 top quality papers for the conference and the proceedings. The acceptance rate was about 40%. The buoyant numbers of submissions in recent years are a clear indication of the importance of the fields related to IDEAL and the popularity of the IDEAL conference and community. This year's conference had five regular themes: Learning and Information Processing, Data Mining and Information Management, Bioinformatics and Neuroinformatics, Agents and Distributed Systems, and Financial Engineering and Modelling. Two special sessions, Agent-based Approach to Service Sciences and Neural-evolutionary Fusion Algorithms and Their Application, were also organized by Akira Namatame and Sancho Salcedo-Sanz, respectively. Many new ideas, novel algorithms and emerging techniques were reported and discussed at the conference.

This 8th IDEAL conference also enjoyed outstanding keynote speeches by distinguished guest speakers: Piero Bonissone, GE Global Research, Kevin Kelly, Carnegie Mellon University, Toby Gibson, European Molecular Biology Laboratory, and Soo-Young Lee of the Korea Advanced Institute of Science and Technology. Their in-depth coverage and work on various challenging topics served as both exceptional examples and inspirations for others.

This year IDEAL also teamed up with two international journals, namely, the *International Journal of Neural Systems* and the *Journal of Mathematical Modelling and Algorithm* for two special issues. The extended papers, together with contributed articles received in response to subsequent open calls, will go through further rounds of peer refereeing in the remits of these two journals.

We would like to thank the International Advisory Committee and the Steering Committee for the guidance and advice. We would particularly like to acknowledge the diligent work of our Programme Committee members, who performed review tasks admirably under tight deadline pressures.

Particular thanks go to CERCIA (The Centre of Excellence for Research in Computational Intelligence and Applications) and the School of Computer Science (especially Ceinwen Cushway) of the University of Birmingham, for their support and organization of IDEAL 2007.

We are also grateful to the publisher, Springer, especially Alfred Hofmann and Anna Kramer at the LNCS Editorial Office, for their continued support and collaboration in this demanding publication project.

Last but not the least we thank all the authors and participants for their contributions that made this conference such a successful and enjoyable event.

October 2007

Hujun Yin  
Peter Tino  
Emilio Corchado  
Will Byrne  
Xin Yao

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