This volume contains papers presented at AI 2010, the 23rd Australasian Joint Conference on Artificial Intelligence held December 7–10, 2010 in Adelaide, South Australia. The Australasian Joint Conference on Artificial Intelligence has a long history and has established itself as the premier event for artificial intelligence researchers in the Australasia region.

AI 2010 received 112 submissions with authors from 27 countries. The countries most represented included Australia, New Zealand, China, Malaysia, Japan, Iran, Canada, and Spain. Each submission was reviewed by up to 6 reviewers, and on average there were 3.2 reviewers per paper. Some papers were intensively discussed among the reviewers, and extra reviews were sought during the discussion period. After the intensive review process, the Program Committee decided to accept 52 papers for presentation at the conference. These papers are included in this volume. The research papers cover a range of topics in artificial intelligence theory and application. A strong focus in this volume is on various learning methods and their applications.

AI 2010 featured three keynote speeches by distinguished researchers: Gautam Biswas (Vanderbilt University, USA), KotagiriRamamohanarao (The University of Melbourne, Australia), and Qiang Yang (The Hong Kong University of Science and Technology). Their talks cover theoretical challenges and advanced applications in current artificial intelligence research.

Two workshops, with their own proceedings, were held on December 7. Extreme Learning Machines (ELM 2010) was organized by Guang-Bin Huang (Nanyang Technological University, Singapore) and Dianhui Wang (La Trobe University, Australia). The 6th Australasian Ontology Workshop was organized by Thomas Meyer (Meraka Institute South Africa), Mehmet Orgun (Macquarie University, Australia) and Kerry Taylor (CSIRO ICT Centre, Australia).

AI 2010 would not be successful without the support of authors, reviewers and organizers. We thank the many authors for submitting their research papers to AI 2010. We thank the successful authors whose papers are published in this volume for their collaboration during the preparation of final submissions. We appreciate all Program Committee members, including external reviewers, for their timely reviews working to a tight schedule. We are grateful to the senior Program Committee members for organizing discussions and shortlisting papers. We also thank members of the Organizing Committee for their year-long efforts in the preparation, promotion and organization of the conference, especially Ivan Lee for his outstanding service to the conference. We thank support provided by the Australian Computer Society National Committee for Artificial Intelligence.

The conference was held at the City West Campus of the University of South Australia (UniSA). We thank UniSA for sponsoring the venues and facilities.
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September 2010

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