Preface

Artificial intelligence continues to be one of the most vibrant, challenging, and forward-looking areas of computer science. These proceedings collect the papers accepted for presentation at the Twenty-first International Joint Conference on Artificial Intelligence (IJCAI-09) held in Pasadena, California, USA from July 11–17, 2009. This collection represents some of the most exciting research taking place in AI today, continuing the tradition of excellence established by IJCAI at its inception 40 years ago in 1969.

The theme of this year's conference is "the interdisciplinary reach of artificial intelligence." Apart from its forward-looking nature, AI has always been outward-looking, and this theme allows us to explore the broad impact of AI on science, engineering, medicine, social sciences, arts and humanities through invited talks, workshops, tutorials, and other events dedicated to this theme. Many of the papers in this volume are explicitly interdisciplinary, and still more contribute to or draw from other intellectual disciplines indirectly.

The papers presented herein were selected for presentation in IJCAI's technical program through a highly competitive peer review process. Each submitted paper was reviewed by three members of the program committee, and supervised by a senior program committee member and area chair. Authors were given the opportunity to provide feedback on preliminary reviews (for example, to correct any misunderstandings), and senior program committee members directed the discussion of the papers by the reviewers (in some cases, recruiting auxiliary reviewers with special expertise, or engaging the area chair in the discussion as well). On the basis of all reviews, author feedback and discussion, senior program committee members made accept or reject recommendations to the area chairs. The area chairs then met face-to-face to make final decisions.

In the end, we received 1,291 submissions, and accepted 331 papers (a 25.6 percent acceptance rate). All papers will be presented orally during IJCAI's technical program. While the reviewing process is intensive, it ensures that IJCAI adheres to the highest standards of quality. The overall quality of submissions was very high, and we hope you agree that the accepted papers appearing in these proceedings make significant contributions to the state-of-the-art, and reflect some of the most outstanding work in the field. Of note are two papers that were selected as IJCAI-09 Distinguished Papers:

> Learning Conditional Preference Networks with Queries
> *Frédéric Koriche and Bruno Zanuttini*

> Consequence-Driven Reasoning for Horn *SHIQ* Ontologies
> *Yevgeny Kazakov*

As part of the main technical program, we have six outstanding invited speakers: Cristina Conati, Thomas G. Dietterich, Luc Steels, Hal R. Varian, Gerhard Widmer, and Qiang Yang. These researchers help showcase our theme—their research reflects the mutual influence between AI and a variety of other disciplines: education, ecology, economics, the origins of language, music and assistive technologies.

We also have extensive tutorial and workshop programs, with 35 workshops and 19 tutorials, with many of these again focusing on the rich multidisciplinary tradition of AI research. In addition, a number of special events and colocated conferences and symposia will enrich the IJCAI experience. Among the special events are the IJCAI-09 AI Video Competition; the IJCAI-09 Robotics Exhibition and Program; the AAAI/SIGART Doctoral Consortium; IJCAI-09 Industry Day; and a variety of technical tours. A full list of collocated events is listed elsewhere in these proceedings.

It is impossible to acknowledge everyone who contributed to the success of the conference technical program and special events, but the following people deserve special recognition. Thanks to the conference committee for their continuous assistance and guidance on the organization of the technical program and associated special events, including conference chair Hiroaki Kitano, Rich Doyle, Ramasamy Uthurusamy, Carol Hamilton, and Vesna Sabljakovic-Fritz. Special thanks to the staff at AAAI—in particular, Carol Hamilton and Keri Harvey—for their tireless efforts and the invaluable expertise they brought to bear. Thanks to Thomas Preuss for his attentive (and extremely patient) technical assistance with the conference management software, ConfMaster.

Sylvie Thiebaux (workshops chair) and Ronen Brafman (tutorials chair) put together fantastic workshop and tutorials programs. Thanks also to the chairs of the video competition, David Aha and Michael Bowling, the doctoral consortium, Scott Wallace and Chris Brooks, and the robotics exhibition and program, Chad Jenkins and Monica Anderson, for their tremendous efforts. As a community we should thank the entire program committee—22 area chairs, 91 senior program committee members, over 600 program committee reviewers, and a number of auxiliary reviewers—for their contributions to the reviewing process. Without their commitment, IJCAI simply could not happen. Finally, I want to thank all authors who submitted papers to IJCAI-09. The quality of your work and the impact of your contributions make it abundantly clear that the scientific enterprise that is artificial intelligence is as healthy and vibrant as ever!

> – Craig Boutilier
> *University of Toronto*
> IJCAI-09 Program Chair