

# Preface

This volume contains the full versions of papers presented at the Eleventh International Conference on Principles of Knowledge Representation and Reasoning, held in Sydney, Australia, September 16–19, 2008.

Knowledge representation and reasoning (KR&R) lies at the heart of artificial intelligence research and modern information technology. The highly ambitious goal of the field is to provide computational methods for effectively storing, retrieving, and exploiting human knowledge. It includes representing and reasoning about beliefs, goals, preferences, and actions; it includes models of argumentation, belief change, merging, inconsistency handling, and nonmonotonic reasoning; it also covers topics such as time, space, motion, ontologies, and building useful knowledge-based systems. Applications of KR&R have high potential. A convincing example that has significantly driven KR&R research over the last years is the vision of the semantic web. The semantic web is based on the idea that software systems can provide much better services if the semantics of complex data is explicitly represented and used for reasoning purposes. It clearly poses a challenge for KR&R.

The KR conferences have established themselves as the premier forum for the dissemination of research related to the computational manipulation of knowledge. The biennial conference series started in 1989, and after switching from odd to even years in 1992, has been held every two years ever since. For the first time, the venue is outside Europe and North America.

This year, KR witnessed a significant increase in the number of submitted papers. We received 251 papers (compared to 210 in 2006, 199 in 2004, and 161 in 2002). The last time KR had such a high number of submissions was in 1992. This brings us back to the “good old times” of KR&R and clearly shows that the field is currently gaining a lot of momentum.

Traditional high standards have been maintained for this conference. From the 251 submitted papers, we accepted 69—an acceptance rate below 28 percent. Selecting the papers would not have been possible without the invaluable help of our prestigious program committee. We also gratefully acknowledge the help of the many additional reviewers. Given this year’s tremendous reviewing load, it was a major challenge to keep up reviewing quality. The PC members and the additional reviewers took their role very seriously and did an excellent job.

As in recent years, the “big” themes of KR-2008 are description logics and ontologies, planning and reasoning about action, and belief change / inconsistency handling and argumentation / nonmonotonic reasoning / logic programming. In addition, we have collections of excellent papers on agents and multiagent systems, approximate reasoning and query answering, causality, preferences, and temporal and spatial reasoning. Unfortunately, there is only one paper (a report from the field) on KR and machine learning — a topic we feel should be represented more prominently at KR.

The conference program includes four invited plenary speakers, two of them shared with one of the collocated conferences. Joe Halpern (KR invited talk) is an internationally renowned scientist

in reasoning about knowledge and uncertainty. Ronen Brafman (ICAPS-KR joint invited talk) has made highly significant contributions in a variety of areas including planning and decision making, reasoning about preferences, and multiagent reinforcement-learning. Adnan Darwiche (CP-KR joint invited talk) is a widely recognized expert of probabilistic and symbolic reasoning, with applications to diagnosis, planning, and cognition. This year's Great Moments in KR speaker is Norman Foo. Foo is a very influential specialist of logic and model theory applied to artificial intelligence, social agents, and mathematical systems theory. He also laid the foundations of Australian KR, shaping the field with his visionary ideas and incomparable humor.

Like its predecessors, KR-2008 benefits from a number of collocated events: the International Workshop on Non-Monotonic Reasoning (NMR), the International Conference on Automated Planning and Scheduling (ICAPS), and the International Conference on Principles and Practice of Constraint Programming (CP). Cooperation with our fellow chairs and organizers went very smoothly and was worthwhile.

We thank all those who helped making KR-2008 a success. Patrick Doherty, our conference chair, strongly supported us throughout the preparation of the conference. Maurice Pagnucco (local chair) and Abhaya Nayak (local organization) kept things going and stayed cool even while being bombarded by requests from the chairs of no less than four collocated events.. Tommie Meyer, our publicity chair, spread news of the conference around the world. Finally Carsten Lutz, our doctoral consortium chair, put together a highly interesting consortium.

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