

Preface

THIS VOLUME contains the papers accepted for presentation at ICAPS 2006, the Sixteenth International Conference on Automated Planning and Scheduling. The annual ICAPS conference series was formed in 2003 through the merger of two pre-existing biennial conferences, the International Conference on Artificial Intelligence Planning and Scheduling (AIPS) and the European Conference on Planning (ECP). ICAPS continues the traditional high standards of AIPS and ECP as an archival forum for new research in the field of automated planning and scheduling.

The 33 papers included in this volume as Regular Papers are those selected for plenary presentation at ICAPS 2006. These papers were selected from a total of 99 submissions. All submissions were rigorously reviewed by the Program Committee, and this set of accepted papers reflects the Program Committee's high reviewing standards. An additional 28 submissions were selected for poster presentation at the conference, and these are included in this volume as Short Papers. The papers present the latest advances in the field of automated planning and scheduling, ranging in scope from theoretical analyses of planning and scheduling problems and processes, to new algorithms for planning and scheduling under various constraints and assumptions, to empirical evaluation of planning and scheduling techniques in practical applications. They reflect recent research trends in the field toward the use of search and constraint reasoning in planning and scheduling; probabilistic planning models and algorithms; integrated frameworks for planning, scheduling, and

execution; learning in planning and scheduling; and mixed-initiative systems. Planning and scheduling applications that are considered span such diverse areas as work flow composition, crisis intervention planning, supply-chain management, and planning for synthetic characters.

In addition to the technical program, the ICAPS 2006 Conference Program also includes a number of satellite events. A series of 7 tutorials (one full day and six half day) precede the technical program on June 6 and 7: "Issues in Underwater Robotic Applications," "Filtering Techniques in Planning and Scheduling," "Metaheuristics for Solving Scheduling Problems," "Planning and Complexity," "Planning Activities for Earth Watching and Observation Satellites and Constellations: From Off-Line Ground Planning to On-Line On-Board Planning," "Planning Graph Based Reachability Heuristics," and "Multiagent Planning and Scheduling." We thank our tutorial speakers Roman Barták, Jim Bellingham, Daniel Bryce, Bradley J. Clement, Malte Helmert, Subbarao Kambhampati Bill Kirkwood, Michel Lemaitre, Angelo Oddi, Kanna Rajan and Gerard Verfaillie for their presentations. A set of six workshops were also held on June 6 and 7: "Preferences and Soft Constraints in Planning," "POMDPs, Classification and Regression: Relationships and Joint Utilization," "Planning under Uncertainty and Execution Control for Autonomous Systems," "AI Planning for Computer Games and Synthetic Characters," "Plan Analysis and Management," and "Constraint Satisfaction Techniques for Planning and Scheduling Problems." We thank our workshop co-chairs Ruth

Aylett, Lawrence Carin, Maria Fox, Antonio Garrido, Alfonso Gerevini, Christophe Guettier, Xuejin Liao, Derek Long, Alexander Nareyek, Miguel Salido, Biplav Srivastava and Michael Young for their organizational efforts.

Following the tradition of recent ICAPS conferences, a Doctoral Consortium was once again organized, providing Ph.D. students in the field of automated planning and scheduling with the opportunity to present their current research in an evening poster session during the conference and receive early feedback from experts in the field. The 2006 ICAPS Doctoral Consortium was organized by Jeremy Frank and Marie desJardins, and we thank them for this important service to the young researchers in our field. To further support student researchers in automated planning and scheduling, a Planning and Scheduling Summer School program has also been organized to take place immediately before the ICAPS Conference on June 3–5 at a nearby location. We thank Diane Kitchin and Steve Chien for their efforts to develop a great program of speakers and sessions.

Another traditional colocated event at past ICAPS Conferences has been the International Planning Competition (IPC), and this year the 5th IPC will be held in conjunction with the conference. This year's edition of the competition includes tracks for both deterministic and probabilistic planning. We thank this year's organizers Alfonso Gerevini, Blai Bonet and Bob Givan for carrying forward this important activity of evaluating and benchmarking the state of the art in planning technology. We recognize there is a huge amount of work involved in organizing and running this competition, and also in participating in it. The final stages of the competition, which involves the presentation of results at the conference, are just the tip of a huge planning iceberg.

An inaugural event at ICAPS 2006 is a planning and scheduling technology open house, an informal session where researchers and practitioners can gain hands-on experience with contemporary planning and scheduling systems, including some of those participating in the 5th IPC. We thank Peter Jarvis and David Wilkins for organizing this event. Also, as has been the case in past years, ICAPS 2006 is colocated with KR2006, the Tenth International Conference on the Principles of Knowledge Representation and Reasoning. This year the two conferences are scheduled to occur consecutively and share the same venue: the Low Wood Hotel on Lake Windermere in the Lake District of the UK.

Finally, we thank our sponsors: the Universidad Carlos III de Madrid, Carnegie Mellon University, the US Department of Defense Advanced Research Projects Agency (DARPA), Honeywell Corporation, The Monterey Bay Aquarium Research Institute (MBARI), the National Aeronautics and Space Agency (NASA), the National ICT Australia, the National Science Foundation (NSF), the QSS Group, Inc., the Research Institute for Advanced Computer Science (RIACS), @ROAD Corporation, the University of Huddersfield, and the University of Strathclyde.

*- Derek Long, Stephen Smith,
Daniel Borrajo, and Lee McCluskey*