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Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems

Third International Conference, CPAIOR 2006
Cork, Ireland, May 31 – June 2, 2006
Proceedings



Springer

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Preface

This volume contains the proceedings of the Third International Conference on Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems (CPAIOR 2006). The conference was held in Cork, Ireland, from May 31 to June 2, 2006. Information about the conference can be found at <http://tidel.mie.utoronto.ca/cpaior/>. Previous meetings in this series include two international conferences held in Nice (2004) and Prague (2005) and five international workshops held in Ferrara (1999), Paderborn (2000), Ashford (2001), Le Croisic (2002), and Montreal (2003).

The goal of these meetings is to provide a forum for researchers to present approaches which highlight the integration of CP, AI, and OR techniques. An additional important goal is to allow researchers from diverse backgrounds to learn about techniques in other areas that are used for solving combinatorial optimization problems and therefore to encourage cross-fertilization. One measure of the success that has been enjoyed by these meetings is the number of publications outside this conference series (e.g., at the International Conference on the Principles and Practice of Constraint Programming) that directly explore integrated approaches to solving large and difficult combinatorial problems.

CPAIOR 2006 received 67 submissions. In order to streamline the reviewing process, a subcommittee of the Programme Committee, consisting of Michael Trick, Pascal Van Hentenryck, and the Programme Chairs, evaluated each submission to ensure relevance to the conference aims. The subcommittee unanimously judged that 41 of the submissions were sufficiently relevant to proceed to the full review stage. Each of these submissions received three reviews by members of the Programme Committee. The reviews were extensively discussed during an online Programme Committee meeting. As a result, the Programme Committee chose 20 (29.9%) to be included in the proceedings and presented at the conference.

The authors of the papers in this volume have been invited to submit extended versions to a special issue of the *Annals of Operations Research* entitled “Constraint Programming, Artificial Intelligence and Operations Research.” All papers submitted will be subject to an additional rigorous review process and we expect the special issue to be published in early 2008.

In addition to the technical sessions, three invited talks were given by leading researchers. These diverse talks address the uses of optimization technology in visual art (Robert Bosch, Oberlin College, USA); the growing interest in the AI planning community in solving mixed discrete/continuous problems by exploiting existing CP and OR techniques (Maria Fox, University of Strathclyde, UK); and the issue of duality, a central issue in both traditional OR and CP solution approaches (John Hooker, Carnegie Mellon University, USA).

CPAIOR 2006 continued the tradition of holding a Master Class on a focused topic as part of the conference. This year's Master Class, organized by Ken Brown and Armagan Tarim, consisted of six tutorial sessions on the topic of "Modelling and Solving for Uncertainty and Change." The speakers at the Master Class were Nesim Erkip (Bilkent University, Turkey), Hélène Fargier (IRIT, Toulouse, France), Alexei Gaivoronski (Norwegian University of Science and Technology, Norway), Brahim Hnich (Izmir University of Economics, Turkey), Pascal Van Hentenryck (Brown University, USA), and Gérard Verfaillie (ONERA/CERT, France).

We would like to thank the Programme Committee for their careful work over the past few months in ensuring a high-quality programme for the conference. We would also like to thank everyone involved in the organization of the conference, notably Barry O'Sullivan, the Conference Chair; Ken Brown and Armagan Tarim, the Chairs of the Master Class; Ian Miguel, the Publicity Chair; Michela Milano, the Sponsorship Chair; Tom Carchrae, the Webmaster; and Eleanor O'Riordan for her administrative support. It would have been impossible to hold CPAIOR 2006 without their significant contributions of time and effort.

Finally, we would like to thank the institutions listed below who helped to sponsor the conference. Their generosity enabled the conference to attract invited speakers and instructors for the Master Class as well as to fund student participation. These funds, therefore, greatly contributed to the success of the conference.

March 2006

J. Christopher Beck
Barbara M. Smith
Programme Chairs
CPAIOR 2006

Organization

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