Fundamenta Informaticae 107 (2011) i-ii
DOI 10.3233/FI-2011-396
IOS Press

RCRA 2009
Experimental Evaluation of Algorithms for Solving Problems with Combinatorial Explosion

Theory and experimentation are two roots common to many scientific disciplines such as Physics, Medicine, and Computer Science. In all these disciplines theory and experimentation are tightly intertwined: they grow together and together make Science progress and evolve.

Computer science is often faced with problems of combinatorial nature which are studied in the NP-completeness theory. For those problems, in many cases, experiments help us to point-out interesting phenomena and to derive efficient solutions.

Rappresentazione della Conoscenza e Ragionamento Automatico (RCRA, `rcra.aixia.it`) is a scientific community interested in Knowledge Representation and Automated Reasoning. It is part of the Italian Association for Artificial Intelligence (AI*IA, `www.aixia.it`). In the last few years, the yearly workshop of RCRA was devoted to the experimental evaluation of algorithms with very large search space.

In this issue we present a selection of the papers presented in the 2009 edition, held in Reggio Emilia (Italy) the 11th and 12th of December in conjunction with the XI conference of AI*IA. Beside organizing the workshop, RCRA was responsible for one session of the conference. 14 papers were presented at the workshop, and 4 papers were selected for the RCRA session at the AI*IA conference. The authors of these 18 papers were invited to submit an extended version of their article for possible publication in this special issue, and, after a further selection and two rounds of reviews, eight articles have been accepted.

Two papers deal with the planning domain: Cesta *et al.* provide feasibility results of flexible plan verification, and Gerevini *et al.* study heuristic features for planning through local search and action graphs. Two papers address combinatorial problems with multiple CPU: Hyvärinen *et al.* study the partitioning of search spaces for randomized search, while Lewis *et al.* propose the parallel QBF solver PaQuBE. He *et al.* propose an 'automaton constraint' for local search. Lombardi *et al.* investigate the impact of information extracted from sampling and diving on the solution of constraint satisfaction problems. Lynce and Marques-Silva propose an algorithm for restoring satisfiability in a constraint satisfaction problem using a MaxSAT solver. Zanzotto *et al.* propose efficient graph kernels for textual entailment recognition.

We are indebted with the reviewers, who did the difficult work of selecting the best papers out of such a high level quality: Gilles Audemard, Francesco Calimeri, Gianluca Caminiti, Agostino Dovier, Esra Erdem, Wolfgang Faber, Pierre Flener, Hector Geffner, Daniel Le Berre, Inês Lynce, Marco Maratea, Joao Marques-Silva, Pedro Meseguer, Massimo Narizzano, Ilkka Niemelä, Maddalena Nonato, Angelo Oddi, Gilles Pesant, Steven Prestwich, Daniel Riera, Wang Rui, Domenico Salvagnin, Andrea Schaerf, Kiril Simov, Kostas Stergiou, Mirek Truszczyński, and Hao Zhang.

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