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Nota di contenuto	Intro -- Preface -- Prize-Winning Papers -- Tutorials and Workshops -- Conference Organization -- The Association for Constraint Programming -- Table of Contents -- Invited Talks -- A Modular Architecture for Hybrid Planning with Theories -- References -- Teaching Constraint Programming -- One Problem, Two Structures, Six Solvers, and Ten Years of Personnel Scheduling -- References -- Concurrent Constraint Programming Research Programmes - Redux -- References -- Best Technical Track Paper -- On Broken Triangles -- 1 Introduction -- 2 Value Merging in Binary CSP Based on the BTP -- 3 Experimental Trials -- 4 Generalising BTP-Merging to Constraints of Arbitrary Arity -- 5 A Tractable Class of General-Arity CSP -- 5.1 Directional General-Arity BTP -- 5.2 Merging -- 5.3 Tractability of DGABTP for a Known Variable Ordering -- 5.4 Finding a DGABTP Variable Ordering Is NP-Hard -- 6 Conclusion -- References -- Best Application Track Paper -- Using CP in Automatic Test Generation for

ABB Robotics' Paint Control System -- 1 Introduction -- 2 Robotized Painting -- 2.1 Example of Robotized Painting -- 3 Testing the IPS -- 3.1 Continuous Integration -- 3.2 Testing in a CI Environment -- 4 CP Model of the IPS -- 4.1 Decision Variables and Domains -- 4.2 Test Scenarios -- 4.3 Avoiding Trivial and Enforcing Diversity -- 4.4 Search and Optimization -- 4.5 Search Heuristics -- 5 Implementation and Exploitation -- 5.1 Selection of CP and the CP Solver -- 5.2 Overall Implementation -- 5.3 Execution of the Model -- 5.4 Using the Flexibility of CP -- 5.5 Performance of Model -- 6 Lessons Learned and Conclusions -- 6.2 Actual Defects Found with the CP Model -- 6.3 Return on Investment with the Use of CP -- 6.4 Further Work -- References -- Best Student Paper -- On Compiling CNF into Decision-DNNF -- 1 Introduction -- 2 Technical Preliminaries. 3 Compiling CNFs into Decision-DNNFs -- 3.1 Decision-DNNF -- 3.2 Decision Vtrees -- 3.3 A Compilation Algorithm -- 3.4 Decision-Width -- 3.5 Relationship to Treewidth -- 4 Decision-DNNFs and Model Counters -- 5 From Decision-DNNF to SDD -- 6 Related Work -- 7 Conclusion -- References -- Runner-Up Best Student Paper -- A Complete Solver for Constraint Games -- 1 Introduction -- 2 Constraint Games -- 3 Modeling with Constraint Games -- 4 Pruning Techniques -- 5 An Algorithm for Nash Equilibrium Enumeration -- 6 Experiments -- 7 Conclusion -- References -- Technical Track -- Encoding Linear Constraints into SAT -- 1 Introduction -- 2 Preliminaries -- 2.1 SAT Solving -- 2.2 LCG and LD Solvers -- 2.3 Order and Logarithmic Encoding -- 2.4 Multi Decision Diagrams -- 3 Linear Integer Constraints -- 4 Construction of the MDD -- 5 Encoding MDDs into CNF -- 6 Optimization Problems -- 7 Improvements -- 7.1 Grouping Identical Coefficients -- 7.2 Removing Subsumed Clauses -- 7.3 Solution Phase Saving -- 7.4 Lazy Decomposition -- 8 Related Work and Extensions -- 9 Experimental Results -- 9.1 Multiple Knapsack -- 9.2 RCPSP -- 9.3 Graph Coloring -- 9.4 Sport Leagues Scheduling -- 10 Conclusion -- References -- Efficient Application of Max-SAT Resolution on Inconsistent Subsets -- 1 Introduction -- 2 Formalism and Definitions -- 3 Max-SAT Resolution -- 4 Transforming Inconsistent Subsets -- 5 Improved Transformation of Inconsistent Subsets -- 6 Experimental Study -- 7 Conclusion -- References -- Sequential Time Splitting and Bounds Communication for a Portfolio of Optimization Solvers -- 1 Introduction and Related Work -- 2 Solving Behaviour and Timesplit Solvers -- 3 Splitting Selection and Evaluation -- 3.1 Evaluation Metrics -- 3.2 TimeSplit Algorithm -- 3.3 TimeSplit Evaluation -- 4 Timesplit Portfolio Solvers -- 4.1 Static Splitting -- 4.2 Dynamic Splitting. 5 Empirical Evaluation -- 5.1 Test Results -- 6 Conclusions and Future Work -- References -- Scoring-Based Neighborhood Dominance for the Subgraph Isomorphism Problem -- 1 Introduction -- 2 CP for the Subgraph Isomorphism Problem -- 2.1 Technical Background -- 2.2 Isomorphism Model and Filtering Procedures -- 3 Scoring-Based Neighborhood Dominance -- 3.1 Principle and Correctness -- 3.2 Filtering SND Constraints -- 3.3 Simplifying the Target Graph -- 4 Theoretical Filtering Comparisons -- 5 A Weak SND Algorithm -- 6 Experimental Results -- 7 Conclusion -- References -- Linking Prefixes and Suffixes for Constraints Encoded Using Automata with Accumulators -- 1 Introduction -- 2 Background: Automata with Accumulators -- 3 Reverse Constraints and Glue Constraints -- 3.1 The Reverse of a Constraint -- 3.2 Glue Constraints -- 3.3 Deriving the Glue Constraint -- 4 Implied Constraints on Prefixes and Suffixes -- 5 Experiments -- 6 Constant-Time Move Probing in Local Search -- 7 Conclusion -- References -- The Propagation Depth of Local

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Sommario/riassunto

This book constitutes the refereed conference proceedings of the 20th International Conference on Principles and Practice of Constraint Programming, CP 2014, held in Lyon, France, in September 2014. The 65 revised papers presented together with 4 invited talks were carefully selected from 108 submissions. The scope of CP 2014 includes all aspects of computing with constraints, including theory, algorithms, environments, languages, models, systems, and applications such as decision making, resource allocation, and agreement technologies.

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