

Preface

This volume contains the proceedings of the 21st International Conference on the Principles and Practice of Constraint Programming (CP 2015), which was held in Cork, Ireland, from August 31 to September 4, 2015. Detailed information about the conference is available at <http://cp2015.a4cp.org>. The CP conference is the annual international conference on constraint programming. It is concerned with all aspects of computing with constraints, including theory, algorithms, environments, languages, models, systems, and applications such as decision making, resource allocation, scheduling, configuration, and planning.

For the purpose of the conference's scientific programming, we invited submissions to the technical, application, and published journal tracks. We received 80, 25, and 14 submissions to these tracks respectively. Authors chose to submit either long (15 pages) or short (8 pages) papers to the technical and application tracks. The review process for the technical track relied on a two-level Program Committee and on additional reviewers recruited by Program Committee members. Each submission to the technical track was assigned to one member of the Senior Program Committee and three members of the track's Program Committee. Submissions to the application track were each assigned to three members of its Program Committee. Every paper received at least three reviews. Once the initial reviews were in, authors were given an opportunity to respond before a detailed discussion was undertaken at the level of the Program Committees, overseen by the Program Chair and the Senior Program Committee member or the Application Track Chair, as appropriate. For the first time this year the Senior Program Committee did not meet in person but deliberated by video conference instead. The published journal track gives an opportunity to discuss important results in the area of constraint programming that appeared recently in relevant journals, but had not been previously presented to the community at conferences. Submissions were evaluated by a separate Program Committee for relevance and significance.

At the end of the reviewing process, we accepted 39 papers from the technical track, 15 papers from the application track, and 10 papers from the published journal paper track. The Senior Program Committee awarded the Best Paper Prize to John N. Hooker for "Projection, Consistency, and George Boole" and the Best Student Paper Prize to Alexander Ivrii, Sharad Malik, Kuldeep S. Meel, and Moshe Vardi for "On Computing Minimal Independent Support and Its Applications to Sampling and Counting." The Application Track Program Committee awarded the Best Application Paper Prize to Tommaso Urli and Philip Kilby for "Long-Haul Fleet Mix and Routing Optimisation with Constraint Programming and Large Neighbourhood Search." The Program Chair and the *Constraints* journal editor-in-chief, Michela Milano, also invited six papers from the technical and application tracks for direct publication in that journal. These were presented at the conference like any other paper and they appear in the proceedings as a one-page abstract.

This edition of the conference was part of George Boole 200, a celebration of the life and work of George Boole who was born in 1815 and worked at the University College of Cork. It was also co-located with the 31st International Conference on Logic Programming (ICLP 2015). The conference program featured three invited talks by Claire Bagley, Gerhard Friedrich (joint with ICLP), and Douglas R. Smith. This volume includes one-page abstracts of their talks. The conference also featured four tutorials and six satellite workshops, whose topics are listed in this volume. The Doctoral Program gave PhD. students an opportunity to present their work to more senior researchers, to meet with an assigned mentor for advice on their research and early career, to attend special tutorials, and to interact with one another. The winners of the 2015 ACP Research Excellence Award and Doctoral Research Award presented their award talks. The results of the annual MiniZinc Challenge were announced and a joint ICLP/CP Programming Competition was held. For the first time an Industry Outreach effort, headed by Helmut Simonis, provided formal opportunities for CP researchers and representatives from industry to interact: The former were presented with industrial problems to solve in a friendly competition and the latter were presented with samples of industrial problems solved using CP technology. Following the conference, a CSPlib sprint event took place to update this library of constraint satisfaction problems. All these contributed to a very exciting program.

I am grateful to many people who made this conference such a success. First of all, to the authors who provided excellent material to select from. Then to the members of the Program Committees and additional reviewers who worked hard to provide constructive, high-quality reviews. To members of the Senior Program Committee who helped me ensure that each paper was adequately discussed, wrote meta-reviews for their assigned papers, and participated in live remote deliberations — for some, quite early or late in the day. To Christian Schulte in particular, who agreed to step in where I had a conflict of interest. Of course there is a whole team standing with me, who chaired various aspects of the conference: Ken Brown, Barry O’Sullivan (Conference Chairs) and their own local team (Barry Hurley as webmaster; Kathy Bunney who provided coordinating support; the technical and administrative support staff of the Insight Centre for Data Analytics at UCC), Louis-Martin Rousseau (Application Track Chair), Thomas Schiex (Published Journal Track Chair), David Bergman and Marie Pelleau (Doctoral Program Chairs), Willem-Jan van Hoeve (Workshop and Tutorial Chair), Helmut Simonis (Industry Outreach Chair), and Ian Miguel (Publicity Chair). Thank you for your dedication! I acknowledge and thank our sponsors for their generous support: they include, at the time of writing, the Association for Constraint Programming, the Association for Logic Programming, ECCAI — the European Coordinating Committee for Artificial Intelligence, the Insight Centre for Data Analytics, Science Foundation Ireland, Springer, and University College Cork. Finally, I thank the ACP Executive Committee for the trust they showed me in asking me to serve as Program Chair. It has been an honor.



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