

Report on the Twenty-Second International Conference on Case-Based Reasoning

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■ *The Twenty-Second International Conference on Case-Based Reasoning was held from September 29 to October 1, 2014. This report summarizes the conference highlights.*

The Twenty-Second International Conference on Case-Based Reasoning (ICCBR), the premier international meeting on research and applications in case-based reasoning (CBR), was held from Monday September 29 to Wednesday October 1, 2014, in Cork, Ireland. ICCBR is the annual meeting of the CBR community and the leading conference on this topic. Started in 1993 as the European Conference on CBR and 1995 as ICCBR, the two conferences alternated biennially until their merger in 2010.

The main conference track featured 19 research paper presentations, 16 posters, and two invited speakers. The papers and posters reflected the state of the art of case-based reasoning, dealing both with open problems at the core of case-based reasoning (especially in similarity assessment, case adaptation, and case-based maintenance), as well as trending applications of CBR. Among the applications this year were the coordination of autonomous vehicles in disaster relief

operations; the capture of oil drilling problem experiences; sentiment analysis in Amazon product reviews; and the prediction of teen driving behavior.

The first invited speaker, Tony Veale from University College Dublin, Ireland, spoke about the paradoxical role of reuse in creativity. The second invited speaker, Frode Sørmo from Verdande Technology, presented his experiences in applying CBR across different application areas.

In addition to the main conference, this year ICCBR featured its Sixth Doctoral Consortium, a workshop program consisting of three workshops, and the Seventh Computer Cooking Contest. The Doctoral Consortium was chaired by Rosina Weber of Drexel University and Nirmalie Wiratunga of the Robert Gordon University, UK. It gave 14 postgraduate students the important opportunity to discuss their research ideas and get very valuable feedback. This year the Doctoral Consortium featured two invited “career reflection” talks, one by David Wilson from the University of North Carolina, and the other by David Leake from Indiana University, both of which included insightful suggestions about research career planning.

The conference included three workshops. The Workshop on Case-Based Agents was organized by Swaroop Vattam and David W. Aha from the Naval Research Laboratory, USA. The workshop highlighted advances in the intersection of autonomous agents and CBR, including topics such as opportunistic decision making, goal change, and learning by imitation. The Workshop on Synergies between CBR and Data Mining was organized by Isabelle Bichindaritz of SUNY at Oswego, Cindy Marling of Ohio University, and Stefania Montani of the Università del Piemonte Orientale in Italy. The papers presented at the workshop exemplified trends of CBR integration with statistical methods, learning algorithms, process mining, text mining, signal mining, and stream mining. The Workshop on Reasoning About Time in CBR, organized by Odd Erik Gundersen of Verdande Technology and Stefania Montani of Università del Piemonte Orientale, considered how to represent and reason with time in CBR. It began with a keynote, invited talk by Ashwin Ram of Georgia Tech, revisiting his seminal work with Juan Carlos Santamaria on continuous CBR. Papers presented at the workshop dealt with topics including long-term dependence and concise, symbolic representations of time-series data. All three workshops engendered lively discussion.

A regular feature of the conference in recent years has been the Computer Cooking Contest, now in its seventh year, in which teams compete to produce computer systems that propose recipes. This has proven to be a fertile testing ground for new developments in CBR. Alongside presentations of papers, this year, two teams went head-to-head to produce cocktail recipes from a set of starting ingredients. Bar

staff mixed the cocktails and served them to a jury. The Contest this year was organized by Mirjam Minor, Goethe University, Germany, and Emmanuel Nauer, LORIA, France.

The conference organizers want to thank the conference sponsors, the *Artificial Intelligence Journal*, the Department of Computer Science at University College Cork, Empolis, Fáilte Ireland, Knexus Research Corporation, and Verdande Technology. They also want to acknowledge the support of AAAI and the Cork Convention Bureau.

The conference chair was Derek Bridge of the Insight Centre for Data Analytics at University College Cork, Ireland. The program chairs were Luc Lamontagne of Université Laval, Quebec, Canada, and Enric Plaza of IIIA, Artificial Intelligence Research Institute CSIC, Barcelona.

Derek Bridge is a senior lecturer in the Department of Computer Science at University College Cork and a member of the Insight Centre for Data Analytics, in which he leads the Recommender Systems research strand. His Ph.D. from the University of Cambridge was in the area of computational linguistics. His subsequent research has covered topics such as machine learning of natural language grammars; analyses of case-based learning; similarity measures, retrieval algorithms, and maintenance algorithms for case-based reasoning; conversational recommender systems; and explanations in both case-based reasoning and recommender systems.

Luc Lamontagne is a professor in the Department of Computer Science and Software Engineering at Université Laval. His Ph.D. from Université de Montréal pertained to case-based reasoning and computational linguistics. After completing his Ph.D., he worked on command and control systems as a research scientist for the Canadian Department of National Defence. His current research interests include textual CBR, learning similarity measures, reasoning with sequential cases, question-answering systems, virtual assistants, and statistical approaches to natural language processing.

Enric Plaza holds the position of research professor at the IIIA-CSIC (Artificial Intelligence Institute of the Spanish Council for Scientific Research), which he joined in 1988, where he is currently head of the Learning Systems Department (LSD). He has held the title of engineer in computer science at the Technical University of Catalonia (UPC) since 1984 and earned his Ph.D. in artificial intelligence by UPC in 1987. His research has spanned different areas of AI, including knowledge acquisition and validation for expert systems, case-based reasoning, machine learning, and multiagent systems. His research is now focused on new techniques for case-based reasoning, learning in the framework of multiagent systems, and argumentation.