

Case-based reasoning research and development: proceedings of the 31st International conference on case-based reasoning (ICCBR 2023).

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This volume contains the papers presented at the 31st International Conference on Case-Based Reasoning (ICCBR 2023), which was held on July 17–20, 2023, at Robert Gordon University in Aberdeen, Scotland, UK. ICCBR is the premier annual meeting of the Case-Based Reasoning (CBR) research community. The theme of ICCBR 2023 was “CBR in a Data-Driven World”, with the aim of considering the question “What is the role of CBR in the modern data-driven world?” The conference encouraged submissions from our invited speakers, researchers, policy makers, and practitioners in the CBR community that consider the current challenges and opportunities for CBR.

Previous ICCBRs, including the merged European Workshops and Conferences on CBR, were as follows: Otzenhausen, Germany (1993); Chantilly, France (1994); Sesimbra, Portugal (1995); Lausanne, Switzerland (1996); Providence, USA (1997); Dublin, Ireland (1998); Seon Monastery, Germany (1999); Trento, Italy (2000); Vancouver, Canada (2001); Aberdeen, UK (2002); Trondheim, Norway (2003); Madrid, Spain (2004); Chicago, USA (2005); Fethiye, Turkey (2006); Belfast, UK (2007); Trier, Germany (2008); Seattle, USA (2009); Alessandria, Italy (2010); Greenwich, UK (2011); Lyon, France (2012); Saratoga Springs, USA (2013); Cork, Ireland (2014); Frankfurt, Germany (2015); Atlanta, USA (2016); Trondheim, Norway (2017); Stockholm, Sweden (2018); Otzenhausen, Germany (2019); Salamanca, Spain (2020); Salamanca, Spain (2021); and Nancy, France (2022).

Recent years have been very challenging for conference organisation generally and it is a credit to the strength of the CBR community that the conferences have continued over this period. The conferences in 2020 and 2021 were held virtually and it was disappointing that we did not get to meet in Spain as planned. It was down to the excellent organisation of last year’s program chairs (Mark Keane and Nirmalie Wiratunga) and local organisers (Emmanuel Nauer and Nicolas Lasolle) that the conference in Nancy, France returned to a face-to-face format although still delivered as a hybrid event. And while this year’s conference was also available online the transition back to a face-to-face format continued and it was fantastic to see the return to in-person conferences continuing with the vast majority of participants attending the sessions in person.

ICCBR 2023 received 72 submissions from authors in 15 countries, spanning Europe, North America, and Asia. Each submission was single-blind reviewed by at least two reviewers and most papers were reviewed by three Program Committee members, with tied decisions being resolved by additional reviewing. Of the 72 submissions, the committee decided to accept 26 papers in total with 18 (25%) selected for oral presentations, and a further 8 (11%) being accepted as posters. The program also included three invited talks and a panel discussion session.

The pre-conference events for ICCBR 2023 began on Sunday, July 16 with a visit to Royal Deeside and Lochnagar distillery. After this visit, there was the first meeting for participants in the Doctoral Consortium (DC), who met their mentors face-to-face for the first time, and prepared for their upcoming presentations. The DC is designed to provide opportunities for PhD students to present their work to senior CBR researchers and their peers, as well as obtain feedback on their research and career objectives. Pre-conference events continued Monday, July 17 and the morning of the 18th with the Doctoral Consortium presentations, four Workshops covering breaking topics in CBR, and two hands-on tutorials. These events gave rise to lively presentations and discussions on current advances in CBR.

The conference itself kicked off on Tuesday, July 18, 2023, with an invited talk from Ben Horsburgh, a Principal ML Engineer at the AI consultancy group QuantumBlack based in London (UK). The talk on emerging trends in real-world AI addressed the conference theme on the role of CBR. This invited talk was followed by two technical sessions on “CBR and Deep Learning” and “Representation & Similarity”. Day 1 ended with a welcome drinks reception to formally open the conference.

The second day started with a keynote invited talk from Ruth Byrne, a Cognitive Scientist from Trinity College Dublin, and 2021 recipient of the Gold Medal for Social Sciences from the Royal Irish Academy. The invited talk on “How people reason with counterfactual explanations for AI decisions” was followed by the first poster session, which began with a Poster Gong Show of rapid two-minute presentations which in turn was followed by poster-board discussions involving all the attendees. Six papers were then presented during two technical sessions on “CBR and Explainable AI” and “Case Base Maintenance”. The second day concluded with a sight-seeing trip of historic Aberdeen and the Gala Dinner.

The final day of the conference began with the last invited talk on the use of Knowledge Graphs in Recommendation and CBR from Derek Bridge, a senior lecturer at University College Cork. This was followed by a panel discussion and the final two technical sessions on “Adaptation: Techniques and Application” and “Case-Based Applications”. The conference concluded with the community meeting, where the Local Chairs (Anjana Wijekoon and Kyle Martin) were thanked for their efforts in staging the conference, as were the Chair of the Doctoral Consortium (Kerstin Bach), and Workshop Chairs (Lukas Malburg and Deepika Verma).

As Program Chairs, our thanks go out to the Advisory Committee who we relied on for advice as an experienced sounding board for many of the key decisions we had to make. Our thanks also to the Program Committee and additional reviewers for handling the large reviewing load at short notice, and for their thoughtful assessments of the submissions and willingness to help. Finally, many thanks to all the participants and sponsors who helped make the conference a successful event.

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