Case-based reasoning research and development: proceedings of the 30th International conference on case-based reasoning (ICCBR 2022).

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2022

This volume contains the papers presented at the 30th International Conference on Case-Based Reasoning (ICCBR 2022), which was held during September 12–15, 2022, at LORIA in Nancy, France. ICCBR is the premier annual meeting of the CaseBased Reasoning (CBR) research community. The theme of ICCBR 2022 was "Global Challenges for CBR", aiming to consider how CBR can and might contribute to challenges in sustainability, climate change, and global health. Specifically, we posed the question "What can CBR do to meet these challenges?", encouraging submissions from our invited speakers, researchers, policy makers, or practitioners in the CBR community that are tackling these global challenges.

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); Seeon 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); and Salamanca, Spain (2021).

Notably, this year's conference marked the 30th anniversary of CBR conferences, since the First European Workshop on Case-Based Reasoning (EWCBR-93) held in Otzenhausen, Germany. Indeed, by an odd bookending coincidence, one of the current Chairs (MK) was also an invited speaker at this very first conference in 1993. Of course, 2020 and 2021 were exceptionally difficult and shocking years due to the COVID-19 pandemic, and during both of these years the conference was held virtually. Sadly, after two attempts, the community did not get to actually meet in Spain in the end. The Program Chairs (Ian Watson and Rosina Weber in 2020; Antonio Sánchez-Ruiz and Micheal Floyd in 2021) and Local Organizers (Juan Manuel Corchado and Fernando de al Prieta) for both of these conferences deserve our heartfelt thanks, for keeping the flame burning during these two difficult years. So, it was with great relief that the community returned to a face-to-face conference in 2022.

ICCBR 2022 received 68 submissions from authors in 15 countries, spanning Europe, North America, and Asia. Most papers were reviewed by three Program Committee members, with tied decisions being resolved by additional reviewing. Of the 68 submissions, 16 (23%) were selected for oral presentations, with a further 10 (15%) being accepted as posters.

The pre-events for ICCBR 2022 began on Sunday, September 11 with an enlightening visit to the "École de Nancy" museum. After this visit, there was the first meeting of participants in the Doctoral Consortium (DC), who met their mentors for the first time and prepared for their upcoming presentations. The DC is designed to provide opportunities vi Preface for PhD students to share and obtain feedback on their research and career objectives with senior CBR researchers and peers. In the evening, the conference attendees had a meal together and viewed a sound and light show in the Place Stanislas. The pre-conference events continued on Monday, September 12 with the Doctoral Consortium proper and several Workshops covering breaking topics in CBR. These events gave rise to lively presentations and discussions on key current advances in CBR.

The first full day of the conference kicked off, on Tuesday, September 13, 2022 with an invited talk from Prof Xiaohong Gao of Middlesex University London (UK) on explainable AI for medical image applications, addressing the global challenges in health. This invited talk was followed by the first two technical sessions on "Explainability in CBR" and "Representation & Similarity", after which the

poster session began with a Poster Gong Show of rapid two-minute presentations followed by poster-board discussions involving all the attendees.

The second day kicked off with more technical sessions on "Applications" and "CBR & ML", with the second invited talk after lunch being given on explainable AI by Prof Cynthia Rudin of Duke University (USA), the 2022 recipient of the AAAI's Squirrel AI Award for Artificial Intelligence for the Benefit of Humanity. This wonderful presentation was followed by a trip to the historic centre of Nancy and the Gala Dinner.

The third and final day of the conference began with the last invited talk from Prof Sutanu Chakraborti of the Indian Institute of Technology Madras (India) on more cognitively appealing paradigms for CBR. This talk was followed by the final technical session on "Graphs & Optimisation", before a community meeting and lunch. The Local Chairs – Emmanuel Nauer and Nicolas Lasolle – along with the highly efficient Local Organizing Committee were roundly thanked for their efforts in staging the conference, as were the Chairs of the Doctoral Consortium (Kerstin Bach and Stelios Kapetanakis), Workshop (Pascal Reuss and Jakob Schoenborn) and Poster (Jean Lieber) Tracks whose contributions were lauded.

As Program Chairs we relied heavily on the Advisory Committee for advice and a wise sounding board for many of the key decisions we had to make: our thanks to Belén Díaz-Agudo, David W. Aha, Isabelle Bichindaritz, David Leake, Mirjam Minor, Barry Smyth, and Rosina Weber. We would also like to thank the Program Committee and additional reviewers for handling the large reviewing load, and their thoughtful assessments of the submissions and willingness to help.

Lastly, we would like to mark and dedicate this year's conference to Prof Cynthia Marling, who passed away on September 7, 2021 in San Diego (USA). Cindy was a Program Co-chair for ICCBR 2019, she was a passionate advocate for the CBR community and a welcoming mentor to early-stage researchers in the area. We will all miss her this year. May she rest in peace.