

Conference Report: ICCBR-2017

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During June 26–28, 2017, around 70 researchers met at Gløsaugen in Trondheim, the main campus of the Norwegian University of Science and Technology (NTNU), for the 25th International Conference on Case-Based Reasoning (ICCBR-2017).¹ The focal topic for this year’s conference was *reuse by analogy*, and 27 peer-reviewed papers covering a wide variety of topics were published in the proceedings that are part of Lecture Notes in Artificial Intelligence by Springer. The proceedings also contained the papers associated with the invited talks.

Case-based reasoning (CBR) consists of interpreting or solving new problems with the help of a case base, where a case is a previously solved problem associated with its solution and possibly other pieces of information, such as an explanation of the problem-solving episode. Usually, a CBR process is composed of four steps, namely: “retrieve” (selection of one or several case(s) from the base); “reuse” (adaptation of the retrieved case(s) to solve the new problem); “revise” (presentation of the newly formed case to application domain experts and, as appropriate, corrections to it); and “retain” (addition of the revised case to the case base, if this addition is judged useful). A CBR system exploits four knowledge containers: the case base, the domain ontology, the retrieval knowledge (e.g. a similarity measure), and the adaptation knowledge. CBR is an active field of research that is application and theory-driven, and it relates to both machine learning and knowledge representation.

Each day of the conference began with an invited talk. On the first day of the conference, Henri Prade presented an introduction on analogical proportions and analogical reasoning in a talk matching the focal topic of the conference. It was noted that analogy is as much a matter of dissimilarity as a matter of similarity. The next day, Agnar Aamodt and Enric Plaza, the inventors of the CBR cycle, presented a historical view of CBR within AI. The historical view was followed by future challenges of AI and the role CBR could play in answering them. In her talk the last day of the conference, Mary Lou Maher investigated computational models of novelty and surprise in CBR as a tool to encourage user curiosity. Novelty and surprise contrast the notion of similarity that is so important in CBR systems to identify solutions of past problems when solving new problems.

The papers selected by the peer-review process were presented during six oral sessions and a poster session and represent CBR in all its diversity. The poster session included a poster quiz, where all the participants were encouraged to answer two questions about each poster. The poster quiz did not only get people to attend the poster session, but also motivated the attendees to discuss the research with the authors of the posters. The winner of the quiz won a treasured prize: an actual copy of a physical paper proceedings! The topics of the oral sessions were: Cased-Based Recommendation; Graph Representations for CBR; CBR and Time Series; CBR and Machine

¹<http://www.iccbr.org/iccbr17>

Learning; Efficient CBR; and Textual CBR. Four shorter talks that were given by industry representatives broadened the scope of the conference allowing the industry representative to introduce relevant problems and practical work in AI and machine learning. The paper *Running with Cases: A CBR Approach to Running Your Best Marathon* won the Best Paper award. Congratulations to Barry Smyth and Pádraig Cunningham who predicted challenging, but achievable personal best race-times for marathon runners as well as race plans to achieve them!

The satellite events were mostly held on the 25th afternoon and on the 26th. These included workshops on CBR and Deep Learning, Computational Analogy, and Process-Oriented CBR, the Doctorial Consortium, which hosted 9 students and their mentors, the Computer Cooking Contest, which focused on recipe generation and adaptation, and the first CBR Video Competition. Visit the ICCBR-2017 web site to view the videos. The proceedings of the different events are available online.² Although no workshop was held in 2017 on CBR in the Health Sciences, several papers related to this topic were presented at the main conference.

ICCBR is not only an important venue for presenting CBR-related research. It is also an important event to build and maintain the CBR community. Generous funding from NTNU, the Norwegian Research Council and the sponsors allowed the conference to cover all the meals for the attendees during the conference. Good dinners at local restaurants ensured that each day's program could be discussed over a nice meal. The social program also included a guided tour of the city, a boat trip, and a walking trip along the fjord in nice sunny weather.

The local and program chairs of the conference are grateful to everyone who made ICCBR-2017 a successful event: the Advisory and Program Committees, the organizers of the satellite events, the invited speakers, and all the participants. We invite everyone in the AI community to contribute, participate, and attend ICCBR-2018, which will be held in Stockholm during 10-12 July 2018!³

²ceur-ws.org/Vol-2028

³iccbr18.com