

The 25th International Conference on Case-Based Reasoning

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■ ICCBR-2017, the 25th International Conference on Case-Based Reasoning, was held in Trondheim (Norway) in June 2017. The conference included 27 original contributions presented in oral sessions and a poster session. In addition to three invited talks, the meeting also included workshops on CBR and deep learning, computer analogy, and process-oriented CBR, as well as a doctoral consortium, the Computer Cooking Contest, and the first CBR video competition.

From June 26 to 28, 2017, approximately 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 the Lecture Notes in Artificial Intelligence by Springer. The proceedings also contained the papers associated with the invited talks.

Case-based reasoning (CBR) is a methodology for 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 (for example, 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, Henri Prade presented an introduction to 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 it is 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 described computational models of novelty and surprise in CBR as a tool to encourage user curiosity. Novelty and surprise contrast with 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 two-minute pitches in front of the plenum as well as a poster quiz, where all the participants were encouraged to answer questions about each poster. The poster quiz not only encouraged attendance, but also guided attendees through all the posters and facilitated discussions with the authors of those posters. The winner of the quiz won a treasured prize: an actual paper copy of the proceedings. The topics of the oral sessions were case-based recommendations; graph representations for CBR; CBR and time series; CBR and machine learning; efficient CBR; and textual CBR. Four shorter talks given by industry representatives broadened the scope of the conference, allowing the industry representatives 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 afternoons of June 25th and 26th. These included workshops on CBR and deep learning, computational analogy, and process-oriented CBR; the doctoral consortium, which hosted nine 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 website 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 our other 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-2018,³ which will be held in Stockholm, July 10–12, 2018.

Notes

1. www.iccbr.org/iccbr17.
2. ceur-ws.org/Vol-2028.
3. iccbr18.com.

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Odd Erik Gundersen is leading the AI and machine learning effort at TrønderEnergi and is also an adjunct associate professor at the Norwegian University of Science and Technology (NTNU). His research focuses on situation and context aware systems, as well as the reproducibility of machine learning research.

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