

Computational Analogy 2017

Workshop at the International Conference on Case-Based Reasoning (ICCBR 2017)

Trondheim, Norway, June 26-28, 2017

<https://iccbr-ca2017.limsi.fr>

Workshop Description

Computational Analogy and Case-Based Reasoning (CBR) are closely related research areas. Both employ prior cases to reason in complex situations with incomplete information. Analogy research often focuses on modeling human cognitive processes, the structural alignment between a case/source and target, and adaptation/abstraction of the analogical source content. While CBR research also deals with alignment and adaptation, the field tends to focus more on retrieval, case-base maintenance, and pragmatic solutions to real-world problems. However, despite their obvious overlap in research goals and approaches, cross communication and collaboration between these areas has been progressively diminishing. CBR and Analogy researchers stand to benefit greatly from increased exposure to each other's work and greater cross-pollination of ideas. The objective of this workshop is to promote such communication by bringing together researchers from the two areas, to foster new collaborative endeavors, to stimulate new ideas and avoid reinventing old ones.

Topics of interest

Topics of interest include, but are not limited to:

- General analogical reasoning techniques
 - Adaptation
 - Alignment-based explanation/evaluation
 - Analogical distance
 - Analogical proportions in formal concept analysis
 - Analogical proportions in mathematical structures
 - Analogy in numerical settings
 - Compound analogy
 - Constructing alignments and mappings
 - Feature-based models of analogy and analogical reasoning
 - Logic-based models of analogy and analogical reasoning
 - Modality of representation of case/analogical source
 - The role of expertise in analogical reasoning
 - Segmenting and constructing cases for alignment
 - Solution-based vs. Problem-based approaches
 - Structural models of analogy and analogical reasoning
 - Types of analogical transfer/mapping
 - Analogical retrieval
- Analogical retrieval
 - Data mining techniques
 - Data sources for cases/analogy
 - Feature-based vs. structural retrieval
 - Indexing
 - Repository-based approaches

- Analogical generalization
 - Analogical abstraction
 - CBR and Analogy using generalizations or schemas
 - Constructing generalizations
 - Cross-discipline translation of concepts/vocabulary
- Applications: Computational Analogy for...
 - Cognitive Modeling
 - Computational Creativity
 - Computational Design
 - Decision-making for robotics or virtual agents
 - Knowledge capture
- Frontiers in Computational Analogy
 - Assessing models of Computational Analogy
 - Connections to Professional Practice in Engineering and Design
 - Hybrid models
 - Theoretical foundations of Computational Analogy

Organizing Committee

Fadi Badra (badra@univ-paris13.fr), Université Paris 13, Paris (France) (Co-chair)

Tarek Besold (Tarek.Besold@uni-bremen.de), University of Bremen (Germany) (Co-chair)

Joseph Blass (joebl@u.northwestern.edu), Northwestern University (USA)

Tesca Fitzgerald (tesca.fitzgerald@cc.gatech.edu), Georgia Institute of Technology (USA)

Vincent Letard (vincent.letard@limsi.fr), LIMSI (France)

Participation

The workshop will be held on June 26-28th, 2017, as part of the ICCBR 2017 workshop series in Trondheim, Norway. The workshop is open to all interested conference participants. We welcome longer submissions (up to 10 pages), as well as shorter submissions for work in progress or position papers. Papers will be reviewed by qualified reviewers drawn from the workshop's Program Committee, and the Program Committee will select amongst the submitted papers for oral presentation. We also encourage those who do not want to submit a paper to attend, as one of the primary goals of the workshop is to foster greater communication and cross-pollination of ideas amongst Computational Analogy and CBR researchers.

Submissions

Paper submissions should be formatted using the ICCBR Conference format, but with a maximum of 10 pages in length (including references). Shorter submissions (max 5 pages), such as work in progress or position papers, are also welcome. Authors will be required to submit their papers through the workshop submission website.

Workshop submission website : <https://easychair.org/conferences/?conf=cawiccbr17>

Important dates

Submission deadline : April 24th, 2017

Notification of acceptance : May 8th, 2017

Camera-ready paper : May 29th, 2017