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Special Issue: Cognitive Reasoning

Special Issue Guest Editors:
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Human reasoning or the psychology of deduction is well researched in cognitive psychology and in cognitive science. There are many findings which are based on experimental data about human reasoning tasks. Among others, models for the Wason selection task or the suppression task are discussed by psychologists and cognitive scientists. However, only few of these models are computational and often models are modified when applied to a different task.

Automated deduction, on the other hand, mainly focuses on the automated proof search in formal, logical calculi. Indeed, there is tremendous success during the last decades, and automated deduction systems are used in many industrial applications. However, most automated deduction systems are not really concerned with human reasoning tasks. Recently, a coupling of the areas of cognitive science and automated reasoning is addressed in several approaches. For example, there is increasing interest in modeling human reasoning tasks within automated reasoning systems based on answer set programming, deontic logic, abductive logic programming, and various other AI approaches.

This special issue of the Künstliche Intelligenz Journal, appearing in November 2019, is aiming to foster the synergies between cognitive science and automated deduction. The topics of interest for the special issue of the Künstliche Intelligenz Journal include, but are not limited to:

- Limits and differences between automated deduction and human reasoning
- Automated deduction and the psychology of deduction
- Automated deduction and (preferred) mental models
- Common sense reasoning, cognitive science and automated deduction
- Modeling human reasoning tasks using (classical, non-monotonic or defeasible) logics
- Modeling human reasoning tasks using automated reasoning systems
- Modeling human reasoning tasks using inductive reasoning systems
- Modeling human reasoning tasks using probabilistic reasoning systems
- Applications

The Künstliche Intelligenz Journal, which is published and indexed by Springer, supports the following lists of formats:

- Technical contributions
- Research projects
- Discussions
- Dissertation abstracts
- Conference reports
- Book reviews

If you are interested in contributing to this special issue, please contact one of the guest editors.

The articles should be written in English, in order to attract an international audience, formatted with the Springer LaTeX package for journals, see www.kuenstliche-intelligenz.de/en/ki-journal/author-instructions/, maximally 10 pages in two-column format. Please submit via the editorial manager system http://kuin.edmgr.com/. Log in as author and select the special issue "S.I.: Cognitive Reasoning".