

Call for Papers: Special Issue on Explainable
Reasoning in Face of Contradictions:
Cross-disciplinary Perspectives
Journal of Applied Logics - IfCoLoG Journal of Logics and their
Applications
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In recent years, eXplainable Artificial Intelligence (XAI) has emerged as a prominent direction in artificial intelligence research. In the context of XAI, symbolic reasoning methods are particularly promising, as they allow for inference and decision-making approaches whose properties are formally verifiable. Over the past decades, a range of such properties has been defined as principles for methods of non-monotonic reasoning that allow drawing inferences in face of uncertainty and contradictions. However, while principle-based reasoning methods can be considered explainable from a technical perspective, referring to general properties of the inference method may be insufficient as an explanation to a human user, in particular when explaining how the conclusions drawn from a belief base change after new, potentially conflicting beliefs have been obtained. To address this shortcoming, emerging research integrates principle-based non-monotonic reasoning methods, and in particular formal argumentation approaches, with perspectives from other domains like microeconomic theory, behavioral psychology, and legal reasoning. The special issue aims at further strengthening this integration. Relevant topics are, for example:

- Principle-based symbolic reasoning and explainable loop-busting;
- XAI and formal models of human reasoning;
- Neuro-symbolic approaches to explainable and principle-based reasoning;
- Principle-based and explainable legal reasoning, as well as other cross-disciplinary perspectives on principle-based explainable reasoning.

The special issue's focus is expected to be on formal argumentation approaches; however, submissions that cover other approaches to symbolic reasoning are welcome.

Author Guidelines and Schedule

This special issue invites selected papers that have been accepted for the EXTRAAMAS workshop on explainable agency (co-located with AAMAS 2021, see: <https://extraamas.ehealth.hevs.ch/>). We recommend authors to follow the EXTRAAMAS submission schedule. The post-workshop schedule is as follows:

- **June 30, 2021:** Re-submission of revised/extended selected papers from the EXTRAAMAS workshop
- **August 30, 2021 (approx.):** Notifications of authors
- **September 30, 2021:** Next round of revisions due
- **October, 2021:** Additional revisions will be requested on a per-case basis
- **November 2021:** Submission of special issue

To submit papers to the special issue after the EXTRAAMAS submission deadline, please contact the editors.

Special Issue Editors

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