

Preface of the 1st workshop on eXplainable AI, Knowledge Representation and Knowledge Graphs (XAI-KRKG) and User-Centered Explanations in XAI (UCEX-XAI)

held in conjunction with ECAI 2025

The first editions of the eXplainable AI, Knowledge Representation and Knowledge Graphs (XAI-KRKG) workshop and the User-Centered Explanations in XAI (UCEX-XAI) workshop were held at the 28th European Conference on Artificial Intelligence (ECAI 2025). Both workshops address the growing need for AI systems that are transparent, interpretable, and trustworthy, particularly in high-impact domains such as healthcare, finance, and law.

XAI-KRKG focuses on the integration of Explainable AI with Knowledge Representation and Knowledge Graphs, promoting approaches in which structured domain knowledge supports coherent, context-aware, and trustworthy explanations. UCEX-XAI complements this perspective by emphasizing the design and evaluation of explanations centered on users' needs, goals, and cognitive processes, fostering interdisciplinary collaboration across AI, HCI, and cognitive science.

Together, the workshops highlight the importance of combining knowledge-driven and user-centered approaches to advance transparent and human-aligned AI systems. The program included one keynote by Tarek R. Besold and two presentation sessions featuring five regular papers and five short papers selected through peer review. Each paper received at least two reviews. Submission deadlines were June 15, 2025 for XAI-KRKG and June 8, 2025 for UCEX-XAI. Notifications of acceptance were July 7, 2025 for XAI-KRKG and June 23, 2025 for UCEX-XAI.

We sincerely thank the keynote speaker, authors, program committee members, reviewers, and participants for their valuable contributions to the success of the event.

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Topics of interest for submission included, but were not limited to:

- Techniques and best practices for building interpretable machine learning models intertwined with Knowledge Representation (KR) and Knowledge Graphs (KGs).
- Graph-based interpretability in neural networks and deep learning models.
- Leveraging KR and KGs to infer causality and improve explanations in AI.
- Enhancing reasoning capabilities in AI through symbolic and sub-symbolic Knowledge Representation (KR).
- Combining traditional KR methods with modern XAI techniques for enhanced explainability.
- Using ontologies and taxonomies to structure interpretable AI explanations.
- Theoretical frameworks for explainability within KR and logic-based systems.
- Explainable reasoning methods in rule-based and knowledge-based systems.
- Explainability in dynamic and temporal Knowledge Graphs.

- Factual and Counterfactual explanations for KGs.
- Scalable approaches for real-time explainable reasoning using KR and KGs.
- Evaluation protocols, metrics, and benchmarks for assessing the quality and clarity of KR- and KG-based explanations.
- Cross-domain evaluation of XAI methods in knowledge-driven AI systems.
- Interactive and adaptive explanation frameworks using KGs.
- Personalization of explanations through contextual KR and user feedback.
- Bias and fairness in explainable Knowledge Graphs and KR.
- Identifying and mitigating systemic biases in AI explanations through KR.
- Ensuring fairness in knowledge-driven XAI applications.
- Hands-on tools and open-source libraries for implementing XAI and KGs in real-world settings.
- Novel methodologies for integrating probabilistic KR with XAI.

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