Graphical Reasoning with Imperfect Data (GRID)

Workshop at KR 2023

Duration	1 day
Date	September (TBD: 2, 3 or 4), 2023
Submission Deadline	May 31, 2023
Submission Link	https://easychair.org/conferences/?conf=grid2023
Paper Notification	July 4, 2023
Registration Deadline	TBA at the Workshop Website
Proceedings	Non-archival
Short Papers	2 to 6 pages, LNCS Style
Long Papers	up to 12 pages, LNCS Style
Invited Speakers	Giuseppe Primiero and Sadok Ben Yahia
Organizers	Sihem Belabbes and Jürgen Landes
Contact	belabbes@iut.univ-paris8.fr and juergen_landes@yahoo.de

Workshop description

The quality of real-world data is a major issue in many application domains, especially in data-intensive AI applications. As a matter of fact, the presence of inconsistent, incomplete, inaccurate or uncertain data may not only hamper problem modeling and solving, but also the process of explaining the solutions. More theoretical approaches, on the other hand, have provided graphical tools for principled knowledge representation and reasoning that are much more transparent than opaque real-world AI applications. Indeed, graphical models such as Bayesian networks, knowledge graphs and ontologies have long been used to facilitate the representation of and the reasoning with imperfect data. By providing a visual dimension, they contribute to increasing the understanding of the problem, and thus help practitioners, users (lay and expert) as well as engineers in designing solutions that improve trust, efficiency and transparency.

The GRID workshop aims at bringing the applied and the theoretical approaches together for the benefit of both. Real-world applications can gain in explainability through the use of graphical models, while addressing the intrinsic challenges of poor quality data can improve the understanding and use of graphical models.

Small workshops are often organised around one unifying theme, be it a methodological theme or a challenge. We here focus on both a methodological theme and a challenge. Our approach will bring together 1) a variety of methods drawing on graphical representation and 2) a variety of application domains dealing with different aspects of imperfect data. The varieties generate the necessary distance between approaches to provide opportunities for cross-pollination, while similarities of methods and domains make for a sufficient closeness guaranteeing mutual relevance.

Keywords fall into two groups; one group concerns the methodology, the other relates to data.
Models: Bayesian nets, Markov nets, credal nets, Dung-style argumentation, knowledge graphs, ontologies, data visualization tools.
Data: inconsistent data, uncertain data, data integration, multi-source data, heterogeneous data, consistency maintenance, real-world data, data imputation, missing data, spurious data, data loss, outliers, adversarial data.

Program Committee

Leila Amgoud (CNRS, Université Toulouse 3, FR),
Martin Adamčík (Assumption University, TH),
Paolo Baldi (University of Milan, IT),
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Salem Benferhat (Université d'Artois, FR),
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Matthias Thimm (FernUniversität in Hagen, DE),
Ivan Varzinczak (Université Paris 8, FR),
Srdjan Vesic (CNRS, Université d'Artois, FR).