

The Second International Workshop on Knowledge Graphs for Sustainability (KG4S2024) – Foreword

Eva Blomqvist^{1,*}, Raúl García-Castro², Daniel Hernández³, Pascal Hitzler⁴, Mikael Lindecrantz^{5,†} and María Poveda-Villalón²

¹Linköping University, Linköping, Sweden

²Universidad Politécnica de Madrid, Madrid, Spain

³Institute for Artificial Intelligence, University of Stuttgart, Stuttgart, Germany

⁴Kansas State University, Manhattan, Kansas, USA

⁵Ragn-Sells AB, Sweden

Keywords

Knowledge Graphs, Sustainability, Semantic Web

Workshop Overview

Knowledge Graphs (KGs) are a core part of the Semantic Web and have in the past decade emerged as a central theme on the Web, powering many real-world applications. Not the least because of an increased focus on Explainable AI and Data Science, where KGs can play a key role in both providing semantic interoperability and data integration (linking), as well as reasoning with the represented knowledge. KGs have been applied both in general scenarios, such as Web search and retrieval, as well as in many domain-specific applications. This workshop targets KGs specifically for sustainability, i.e., applications of KGs targeting sustainability challenges.

This is highly timely and important due to the current state of the world, including ecological challenges such as the global climate crisis, acute loss of biodiversity, as well as social sustainability challenges such as increased unrest and threats to democracy in many countries around the world. The foundation of the global transformation towards sustainability is the fact that since 2015 the *2030 Agenda for Sustainable Development* [1] is adopted by all UN member states. As researchers of Semantic Web technologies, such as KGs, we should answer to these challenges and contribute to their resolution. This also shows in an increased amount of funded projects targeting technological solutions with sustainability goals in mind, as well as industry

The 2nd International Workshop on Knowledge Graphs for Sustainability (KG4S2024) – Colocated with the 21st Extended Semantic Web Conference (ESWC2024), May 27th, 2024, Hersonissos, Greece.

*Main contact.

†Proceedings and publicity.

✉ eva.blomqvist@liu.se (E. Blomqvist); r.garcia@upm.es (R. García-Castro); daniel.hernandez@ki.uni-stuttgart.de (D. Hernández); hitzler@ksu.edu (P. Hitzler); mikael.lindecrantz@ragnsells.com (M. Lindecrantz); m.poveda@upm.es (M. Poveda-Villalón)

🆔 0000-0003-0036-6662 (E. Blomqvist); 0000-0002-0421-452X (R. García-Castro); 0000-0002-7896-0875 (D. Hernández); 0000-0001-6192-3472 (P. Hitzler); 0000-0002-5525-6439 (M. Lindecrantz); 0000-0003-3587-0367 (M. Poveda-Villalón)



© 2024 Copyright for this paper by its authors. Use permitted under Creative Commons License Attribution 4.0 International (CC BY 4.0).

initiatives, such as the DataCommons sustainability KGs¹ promoted by Google.

With this workshop we therefore want to highlight the intersection between Knowledge Graphs on the Web, and sustainability research. This workshop specifically targets approaches from the Semantic Web research community for improving sustainability using, for instance, KG technologies. The objectives of the workshop are both to share preliminary research results from academia and industry, as well as identifying challenges and opportunities that can lead to new collaborations, new directions, and future research. Ultimately the aim is to increase the contribution of KGs to the transformation towards global sustainability.

This is the second instance of the workshop, where the previous one was held at The ACM Web Conference in 2023. This year's edition of the workshop is instead colocated with the Extended Semantic Web Conference on May 27th 2024, in Hersonissos, Crete (Greece). In response to our call for papers we received overall 10 submissions (including both short and long papers, as well as industry talk abstracts), and after a thorough review process where each submission got at least 3 high quality reviews by the Program Committee, 8 of those are included in these workshop proceedings, and one additional work constituted an industry poster presentation in the workshop. In addition, the workshop featured a keynote talk by Cogan Shimizu, Wright State University, USA, entitled "KnowWhereGraph and Sustainability" as well as interactive discussions.

Program Committee

- Olaf Hartig, Linköping University, Sweden
- Ornela DeGasperin, INECOL, Mexico
- Cogan Shimizu, Wright State University, Dayton OH, USA
- Ben De Meester, Ghent University, Belgium
- Victor Charpenay, Mines Saint-Etienne, France
- Renzo Angles, Universidad de Talca, Chile
- Anastasios Zafeiropoulos, National Technical University of Athens, Greece
- Lorena Etcheverry, Universidad de la República, Uruguay
- Torsten Hahmann, University of Maine, USA
- Rui Zhu, School of Geographical Sciences, University of Bristol, UK
- Francois Scharffe, New York, USA
- Hande McGinty, Kansas State University, Manhattan KS, USA
- Christiane Plociennik, DFKI, Germany

Acknowledgments

This workshop was supported by the research grants Onto-DESIDE (EU Horizon Europe Grant Agreement No. 101058682), Trace4Value (Vinnova, Sweden), AURORAL (EU H2020 Grant Agreement No. 101016854), EduGate (NSF award 2333532), SAWGraph (NSF award 2333782), KnowledgeSpaces (PID2020-118274RB-I00), IntCDC (DFG EXC 2120/1 – 390831618), and COFFEE (DFG SPP 1921 – 318363223).

¹<https://blog.google/outreach-initiatives/sustainability/data-commons-sustainability/>

References

- [1] U. Nations, Transforming our world: the 2030 agenda for sustainable development, 2015.
URL: <https://sdgs.un.org/2030agenda>.