

# Second International Workshop on Scaling Knowledge Graphs for Industry (SKGi) - LLMs meet KGs: Preface

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## Abstract

This version explores the intersection of Knowledge Graphs (KGs) and Large Language Models (LLMs) with a focus on enabling scalable, efficient, and trustworthy AI applications in industrial contexts. As generative AI rapidly evolves, integrating symbolic and neural methods becomes essential to address challenges such as explainability, data alignment, and system robustness by gathering academic researchers and industry practitioners to discuss practical solutions and future of Semantic Web technologies in the era of foundation models.

## Keywords

Knowledge Graphs, Large Language Models, Graph Retrieval Augmented Generation, Scalable AI, AI for Industry

**Workshop webpage:** <https://sites.google.com/view/skgi/>

## Summary

The AI landscape is shifting toward hybrid approaches that combine the structure and reasoning capabilities of Knowledge Graphs (KGs) with the flexibility and language fluency of LLMs. While LLMs have shown transformative capabilities, they often lack precision, verifiability, and efficiency—particularly in enterprise-grade use cases. KGs, core to the Semantic Web, provide structured, linked, and contextual knowledge that addresses these limitations. In particular, LLMs can benefit from KGs and vice-versa, e.g., KGs can be used to reduce LLMs’ hallucination and LLMs can help in scaling data ingestion in KGs.

The first edition was held in 2024<sup>1</sup> and focused on the practical challenges and solutions for deploying Knowledge Graphs at an industrial scale.

The 2nd International Workshop on Scaling Knowledge Graphs for Industry (SKGi) (half-day) explores the convergence of Knowledge Graphs (KGs) and Large Language Models (LLMs), focusing on building scalable, robust, and trustworthy AI systems for real-world industrial settings. While Knowledge Graphs have long been foundational in semantic technologies, their integration with neural systems like LLMs presents new challenges and opportunities—from data ingestion and dynamic graph construction to retrieval-augmented generation (Graph-RAG), hybrid reasoning, and human-centered interfaces.

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<sup>1</sup>SKGi 2024 - <https://sites.google.com/view/skgi/editions/2024>

SKGi 2025 featured an invited keynote, panel discussions, and interactive sessions. The main keynote, delivered by **Marco De Luca** from **Neo4j**, explored *GenAI-powered Knowledge Graphs and their impact on real-world applications*. Following the accepted presentations, the workshop concluded with an expert panel discussion summarizing the day's insights. Submissions were managed via OpenReview, following a single-blind review process with at least two active researchers assigned to each paper. The workshop received seven submissions from countries including Germany, China, Norway, Colombia, and Ireland, of which two were rejected through the review process.

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