

Third International Workshop on Scaling Knowledge Graphs for Industry (SKGi) - Semantic Powered Agents

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Abstract

SKGi 2026, is motivated by the intersection of Knowledge Graphs (KGs) and semantically oriented technologies, in the context of intelligent *Agents* in productive scenarios, and how these approaches enable scalable, efficient, and trustworthy features in AI applications. As agentic and generative AI rapidly evolves, integrating symbolic and neural methods becomes essential to address challenges such as explainability, data alignment, and system robustness.

Keywords

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

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

Summary

Recent developments in artificial intelligence increasingly point toward hybrid approaches that combine the structured knowledge representation and reasoning capabilities of Knowledge Graphs (KGs) with the flexibility, generative capacity, and linguistic competence of Large Language Models (LLMs). Despite their remarkable progress, LLMs continue to face important limitations with respect to factual accuracy, transparency, verifiability, and computational efficiency, particularly in enterprise and knowledge-intensive settings. KGs, which constitute a central component of the Semantic Web, provide explicit, interconnected, and context-aware representations of knowledge that can help address several of these challenges. At the same time, the relationship between KGs and LLMs is inherently complementary: KGs can provide grounding and structured context to improve the reliability of LLM-generated outputs and reduce hallucinations, while LLMs can facilitate the scalable extraction, integration, and enrichment of knowledge, thereby supporting the construction and maintenance of KGs.

- **SKGi 2024:** The first edition was held in 2024¹ and focused on the practical challenges and solutions for deploying Knowledge Graphs at an industrial scale.
- **SKGi 2025:** The second edition was held in 2025² it focus on the intersection of LLMs and Knowledge Graphs, and the impact of GraphRAG solutions in industrial ecosystems.

SEMANTiCS'26: International Conference on Semantic Systems, September 15–17, 2026, Ghent, Belgium

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

²SKGi 2025 - <https://sites.google.com/view/skgi/editions/2025>

The 3rd International Workshop on Scaling Knowledge Graphs for Industry (SKGi) (half-day) expands the scope to include Agentic AI solutions and their intersection with Knowledge Graphs. This reflects the growing industry demand for hybrid symbolic-neural systems that combine the robustness and structure of KGs with the flexibility and generative power of foundation models. 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.

SKGi 2026 featured an invited keynote, paper presentations, and interactive discussions. The keynote was delivered by **Arlid Waaler**, Professor at the **University of Oslo** and founder of **Oslo Industrial Logic**, a consultancy specializing in logic, semantic technologies, information science, and industrial digitalization. In the talk, entitled *From Engineering Information to Knowledge Graphs: A Language Approach*, the speaker examined the challenges involved in transforming industrial engineering information into knowledge graphs. In particular, the keynote highlighted how engineering knowledge is expressed through standards, models, documents, and data structures whose interpretation often depends on context implicitly shared among engineers. The talk argued that moving such information into knowledge graphs requires attention not only to formal semantics but also to pragmatics, and illustrated this perspective through examples drawn from ongoing industrial initiatives. Submissions were managed via EasyChair, following a single-blind review process with at least two active researchers assigned to each paper. The workshop received six submissions from countries including Germany, Norway, and Belgium, of which two were rejected through the review process.

Acknowledgments

The organization of this workshop has been funded partially by the Austrian Science Fund (FWF) 10.55776/COE12 and the Project SMARTY (GA 101140087) funded by the European Union (EU).