Call for Papers: Bridging Neurons and Symbols for Natural Language Processing and Knowledge Graphs Reasoning @ COLING2025

https://neusymbridge.github.io/

This Second workshop of NeusymBridge @COLING 2025 (Bridging Neurons and Symbols for NLP and Knowledge Graph Reasoning, abbreviated as NeusymBridge below) focuses on the integration of symbolic knowledge and neural models to address challenges in natural language processing (NLP) and knowledge reasoning. The workshop brings together researchers from both academia and industry to explore cutting-edge approaches in neurosymbolic systems, aiming to enhance large language models (LLMs) with more robust reasoning and knowledge representation capabilities. Key topics include the use of knowledge graphs, symbolic inference, and hybrid models to improve the interpretability and reliability of LLMs.

NeusymBridge Workshop@COLING 2025 (abbreviated as NeusymBridge below) invites the submission of long and short papers featuring substantial, original, and unpublished research on Natural Language Processing and Knowledge Graph reasoning.

Paper Submission Information

NeusymBridge Workshop@COLING 2025 (abbreviated as NeusymBridge below) invites the submission of long papers of up to eight pages and short papers of up to four pages. These page limits only apply to the main body of the paper. At the end of the paper (after the conclusions but before the references) papers need to include a mandatory section discussing the limitations of the work and, optionally, a section discussing ethical considerations. Papers can include unlimited pages of references and an unlimited appendix. Authors should follow the general instructions for COLING 2025 proceedings, which are an adaptation of the general instructions for *ACL proceedings.

Please use the template provided by COLING 2025 using the following link: https://coling2025.org/calls/main_conference_papers/

Topics of interest include, but are not limited to:

- Proposing novel knowledge representations that are derived from transdisciplinary research.
- New meaning representation with both symbolic and neural meaning representation.
- Exploring the reasoning mechanism of LLMs, for example, using symbolic structures, or natural languages, to interpret the reasoning mechanism of current large language models.
- Analyzing spatial reasoning of LLMs.
- Distilling symbolic knowledge from LLMs.
- Using knowledge graphs or other types of symbolic Knowledge to improve the quality of LLMs. And developing retrieval-augmented models for combining KG and LLMs.
- New benchmark datasets and evaluation matrices for neuro-symbolic approaches to

different NLP tasks or evaluating the gap between neural reasoning and symbolic reasoning.

- Proposing novel NLP tasks for neuro-symbolic approaches.
- Critical analysis of traditional deep learning or LLMs.
- Proposing novel neural computing that may reach symbolic-level reasoning.
- Addressing efficiency issues in neuro-symbolic systems.
- Applying neuro-symbolic approaches to NLP tasks and other real-life applications.
- New neural architecture for both heuristic reasoning with data and rational reasoning with symbolic rules.

Submission Site

Papers should be submitted through *Softconf/START* using the following link: https://softconf.com/coling2025/BNS-KGR25/

Important Dates

- All deadlines are 11:59PM UTC-12:00 ("anywhere on Earth")
- **Submission Deadline**: November 10, 2024
- **Notification of Acceptance:** December 5, 2024
- **Camera-Ready papers due**: December 13, 2024
- **Workshop Day**: January 20, 2025

Workshop Chair:

- **Kang Liu**, Institute of Automation, Chinese Academy of Sciences, China
- **Yangqiu Song**, The Hong Kong University of Science and Technology, China
- **Zhen Han**, Amazon Inc., United States
- **Rafet Sifa**, University of Bonn, Germany
- **Shizhu He**, Institute of Automation, Chinese Academy of Sciences, China
- **Yunfei Long**, University of Essex, United Kingdom

Note:

When submitting a paper from the START page, please provide essential information about resources (in a broad sense, i.e. also technologies, standards, evaluation kits, etc.) that have been used for the work described in the paper or are a new result of your research. Moreover, ELRA encourages all LREC-COLING authors to share the described LRs (data, tools, services, etc.) to enable their reuse and replicability of experiments (including evaluation ones).

Read more:
https://neusymbridge.github.io/