

From: ICCCI 2025
Sent: Mon, 2 Jun 2025 15:23:38 +0200
To: Khanh-Nhan Nguyen
Subject: ICCCI 2025 notification for paper 164
Attachments: SNCS_ProceedingsPaper_LTP_ST_SN_Switzerland.docx

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Subject: ICCCI 2025 notification for paper 164
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Dear Khanh-Nhan Nguyen,

We have now finished the review and meta-review processes of all papers.

It is our pleasure to inform you that your paper # 164 titled:
“Query-Aware Temporal Knowledge Graph Reasoning with Multi-Source Knowledge Based Generation”
has been accepted by ICCCI 2025 Program Committee for presentation and publication as FULL paper in the
volume of Springer series “Lecture Notes in Artificial Intelligence” (LNAI). Congratulations!

For guaranteeing your paper to be included in the LNAI PROCEEDINGS, please do the following:

1. Revise your paper taking into account all the suggestions and comments of the reviewers. The limit of your paper is 12-15 pages (extra pages will be charged). Note: The paper must be in the LNAI style:
<https://www.springer.com/gp/computer-science/lncs/conference-proceedings-guidelines>
2. Any changes to the author list require approval from the Program Committee, so in case of any alterations, please contact with: adrianna.kozierkiewicz@pwr.edu.pl
3. Upload the final files of your paper using your account in EasyChair by June 16, 2025. In a separate email you will receive instructions how to upload the camera-ready version of your paper (to be included in the Springer LNAI proceedings) and the signed copyright form.

Attached please find the copyright form for LNAI PROCEEDINGS. The required information is as follows:

Title of the proceedings: Computational Collective Intelligence
Volume Editior(s) Name(s): Ngoc Thanh Nguyen et all.

3. At least one of the authors must register online using the link available at the ICCCI 2025 website and pay the conference fee. In a separate email you will receive link to the registration system and instructions.

Please note: Only papers REGISTERED AND PAID in due time and PERSONALLY PRESENTED during the conference will be included in the LNAI PROCEEDINGS.

Thank you very much for your contribution and we look forward to meeting you in Leipzig!

With best regards,
Ngoc Thanh Nguyen and Vu Dinh Duc Anh
General Chairs of ICCCI 2025

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SUBMISSION: 164
TITLE: Query-Aware Temporal Knowledge Graph Reasoning with Multi-Source Knowledge Based Generation

----- METAREVIEW -----

There is no metareview for this paper

----- REVIEW 1 -----

SUBMISSION: 164

TITLE: Query-Aware Temporal Knowledge Graph Reasoning with Multi-Source Knowledge Based Generation

AUTHORS: Khanh-Nhan Nguyen, Nam-Thang Doan and Thanh Le

----- Main research type -----

SCORE: 2 (experimental)

----- Research area -----

Temporal knowledge graphs

----- Scientific contribution -----

The author describe a new method to perform reasoning over temporal knowledge graphs with Large Language Models.

----- Is the scientific contribution relevant to the conference/special session scope? -----

SCORE: 3 (YES)

----- Is the topic of the paper important? -----

SCORE: 3 (YES)

----- Are the findings novel? -----

SCORE: 3 (YES)

---- TEXT:

To my best knowledge the solution proposed in the paper is new and it had not been published in the past.

----- Originality and quality of contribution -----

SCORE: 4 (good)

----- Research presentation -----

SCORE: 2 (poor)

----- Impact of results -----

SCORE: 4 (good)

----- Comments on the scientific soundness -----

The presentation is pretty rough. There is quite a lot of formulas with not explained meanings of the variables, e.g. definition of a query on page 3, missing explanation of a temporal rule on pages 3/4, the tables on pages 6/7. The presentation lacks a complete example of entire process.

Section 6 Conclusions is a summary of the paper and it contains no conclusions.

----- Structure of the paper -----

SCORE: 3 (fair)

----- Quality of diagrams, tables, and equations -----

SCORE: 3 (fair)

----- Selection of references -----

SCORE: 4 (good)

----- Language quality -----

SCORE: 4 (good)

----- Comments on the form of presentation -----

Why do we need Appendix A ?

----- Overall evaluation -----

SCORE: 1 (weak accept)

---- TEXT:

The ideas included in the paper are not well presented.

----- REVIEW 2 -----

SUBMISSION: 164

TITLE: Query-Aware Temporal Knowledge Graph Reasoning with Multi-Source Knowledge Based Generation

AUTHORS: Khanh-Nhan Nguyen, Nam-Thang Doan and Thanh Le

----- Main research type -----

SCORE: 5 (other)

----- Research area -----

Artifical intelligence; knowledge graph reasoning

----- Scientific contribution -----

In this paper, the authors propose MSKGen, a novel query-aware reasoning framework for Temporal Knowledge Graph Reasoning (TKGR) which combines: a rule-based extraction module, a semantic fact retrieval module, relying on RAG and a vector database (Chroma) to provide relevant latent knowledge, and a multi-source reasoning mechanism, which integrates both sources within a controlled prompting scheme to produce accurate and interpretable predictions. Experiments have been conducted on three benchmark datasets (ICEWS14, GDELT, YAGO) showing that MSKGen outperforms SOTA graph-based, rule-based, and LLM-based methods. In addition, an ablation study highlights the complementary roles of both components.

----- Is the scientific contribution relevant to the conference/special session scope? -----

SCORE: 3 (YES)

----- Is the topic of the paper important? -----

SCORE: 3 (YES)

----- Are the findings novel? -----

SCORE: 1 (N/A)

---- TEXT:

The idea of integrating logical rules with semantically retrieved facts via RAG is original in the TKGR domain.

----- Originality and quality of contribution -----

SCORE: 4 (good)

----- Research presentation -----

SCORE: 4 (good)

----- Impact of results -----

SCORE: 4 (good)

----- Structure of the paper -----

SCORE: 4 (good)

----- Quality of diagrams, tables, and equations -----

SCORE: 4 (good)

----- Selection of references -----

SCORE: 3 (fair)

----- Language quality -----

SCORE: 4 (good)

----- Comments on the form of presentation -----

The SOTA can be extended with more works on temporal graphs. Reference 14 misses informations about the date and the conference (or journal)

----- Overall evaluation -----

SCORE: 2 (accept)

---- TEXT:

In this paper, the authors propose MSKGen, a novel query-aware reasoning framework for Temporal Knowledge Graph Reasoning (TKGR) which combines: a rule-based extraction module, a semantic fact retrieval module, relying on RAG and a vector database (Chroma) to provide relevant latent knowledge, and a multi-source reasoning mechanism, which integrates both sources within a controlled prompting scheme to produce accurate and interpretable predictions. Experiments have been conducted on three benchmark datasets (ICEWS14, GDELT, YAGO) showing that MSKGen outperforms SOTA graph-based, rule-based, and LLM-based methods. In addition, an ablation study highlights the complementary roles of both components.

Strengths

- The topic is relevant and addresses a known gap in TKGR
- The use of LLMs to iteratively refine temporal rules and guide relation selection is original and practical.
- The paper is clearly written and generally easy to follow.

Weaknesses

- The approach relies on LLM-based rule generation, iterative refinement, and semantic indexing, which could be computationally demanding. No timing or resource analysis is provided.
- The method is heavily dependent on LLM reasoning quality. I think that is important to include a discussion of

potential problems of hallucinations or bias

- Fix minor typographical issues such as reference to equation in section 4.2

----- REVIEW 3 -----

SUBMISSION: 164

TITLE: Query-Aware Temporal Knowledge Graph Reasoning with Multi-Source Knowledge Based Generation

AUTHORS: Khanh-Nhan Nguyen, Nam-Thang Doan and Thanh Le

----- Main research type -----

SCORE: 4 (theoretical)

----- Research area -----

This paper is related to the field of temporal knowledge graph reasoning and natural language processing , particularly the integration of large language models and retrieval augmented generation techniques for semantic reasoning in evolving knowledge graphs.

----- Scientific contribution -----

The key contribution of the paper is the proposal a novel, query-aware TKGR framework that integrates multi-source knowledge, combining both rule based and semantically retrieved facts using RAG. MSKGen leverages LLMs to improve temporal prediction tasks while maintaining interpretability, scalability, and strong semantic understanding—achieving state-of-the-art results on multiple benchmark datasets.

----- Is the scientific contribution relevant to the conference/special session scope? -----

SCORE: 3 (YES)

----- Is the topic of the paper important? -----

SCORE: 3 (YES)

----- Are the findings novel? -----

SCORE: 3 (YES)

---- TEXT:

Yes, the paper effectively addresses the current limitations of TKGR methods, such as limited query specific customization and underuse of semantic reasoning. MSKGen introduces a new multi source reasoning strategy, combining rule induction, semantic similarity, and candidate ranking in a way not previously explored. Its hybrid architecture represents a substantial step forward in enhancing both the accuracy and interpretability of temporal predictions.

----- Originality and quality of contribution -----

SCORE: 5 (excellent)

----- Research presentation -----

SCORE: 4 (good)

----- Impact of results -----

SCORE: 4 (good)

----- Comments on the scientific soundness -----

The methodology is well founded, with each component of the system rule extraction, semantic retrieval, multi source reasoning, and candidate scoring—rigorously defined. The use of metrics and comparison with competitive baselines reinforces the validity of the results. A strength lies in the framework’s modularity and extensibility. Minor limitation is the relatively high computational complexity due to repeated LLM-based rule generation and refinement cycles, which may hinder scalability for very large TKGs.

----- Structure of the paper -----

SCORE: 5 (excellent)

----- Quality of diagrams, tables, and equations -----

SCORE: 4 (good)

----- Selection of references -----

SCORE: 5 (excellent)

----- Language quality -----

SCORE: 4 (good)

----- Comments on the form of presentation -----

The paper is clearly organized, with detailed figures and methodological breakdowns. The inclusion of example prompts and vector embedding strategies is particularly helpful. The technical writing is strong, although dense in

some sections. A few overly long paragraphs and technical descriptions could benefit from simplification or visual summaries. Overall, the narrative is coherent and well supported with experimental results and logical argumentation.

----- Overall evaluation -----

SCORE: 3 (strong accept)

---- TEXT:

This paper makes a contribution to temporal knowledge graph reasoning by proposing MSKGen—a query aware framework that leverages both rule-based and semantically similar information to enhance prediction performance. The framework uses a temporal rule induction process guided by LLMs and integrates it with a semantic retrieval mechanism based on vector embeddings. This dual strategy allows to reason over structured and unstructured sources simultaneously, providing rich context for temporal queries. The results, evaluated on three benchmark datasets, clearly outperform prior state of the art models, including both LLM-based and graph-based approaches. The modular design, interpretability, and adaptability to diverse data types make it a practical tool for real-world TKG tasks.

Despite some concerns regarding computational cost and reliance on high-quality LLM outputs, the paper addresses a critical area in TKGR research balancing semantic reasoning with structured rule learning. The paper demonstrates significant empirical improvements, making it a compelling candidate for publication.