

WASP 2025

**International Joint Conference on Natural Language
Processing and Asia-Pacific Chapter of the Association for
Computational Linguistics, 2025**

Proceedings of the Workshop

December 23, 2025

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Introduction

We are excited to welcome you to WASP at IJCNLP-AAACL 2025, the Third Workshop for Artificial intelligence for Scientific Publications. This year the conference is being held both online and in Mumbai, India on December 23, 2025.

Building on the success of the First Workshop on Information Extraction from Scientific Publications (WIESP) at AAACL-IJCNLP 2022 and the Second WIESP at IJCNLP-AAACL 2023, the Third Workshop on Artificial intelligence for Scientific Publications (WASP) at IJCNLP-AAACL 2025 aims to establish itself as a pivotal platform for promoting discussions and research in the field of Natural Language Processing (NLP) and Artificial Intelligence (AI). This gathering brings together esteemed experts and renowned organizations with students and early-career researchers who are interested and invested in efforts to extract and mine the world's scientific knowledge from research papers. Their collaboration focuses on developing advanced algorithms, models, and tools that lay the foundation for future machine comprehension of scientific literature. The third iteration of WASP specifically concentrates on various topics related to Artificial Intelligence research for/with scientific publications.

We especially welcome participation from academic and research institutions, government and industry labs, publishers, and information service providers. Projects and organizations using NLP/ML techniques in their text mining and enrichment efforts are also welcome to participate. We strongly encourage the participation of students, researchers, and science practitioners from diverse backgrounds.

WASP 2025 includes one shared task where we invite teams (individuals and groups) to come up with a system to tackle bibliographic creation for space telescopes for TRACS: the dataset of Telescope Reference and Astronomy Categorization Shared task.

WASP 2025 received 31 submissions of which 21 were accepted (15 papers and 6 shared task system papers).

We are thankful to our program committee members for helping us curate a strong WASP 2025 program.

On behalf of the program co-chairs:

Tirthankar Ghosal, Alberto Accomazzi, Kelly Lockhart, and Felix Grezes.

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Keynote Talk Invited 1

Kartheik Iyer

Columbia University

2025-12-23 08:15:00 –

Abstract: Wandering through the Cosmic Library: Harnessing the embedding spaces of large language models for astronomical research and discovery"

Astronomical literature is expanding at an unprecedented rate, with thousands of papers added every month to preprint servers like arXiv.org and indexed by the NASA Astrophysics Data System (ADS). For academics and students, staying current with relevant work while keeping track of shifting trends therefore represents a critical challenge. This talk presents lessons learned from working with the UniverseTBD collaboration to develop Pathfinder, a complement to systems like ADS that uses large language models combined with retrieval-augmented generation (RAG) to enable semantic search and question-answering across the astronomy literature. I will discuss some of the unique challenges of applying NLP and LLMs to scientific publications in astronomy, including: (1) handling domain-specific terminology and mathematical notation, (2) grounding LLM responses in archival data to minimize hallucinations, and (3) leveraging embeddings to create interpretable semantic spaces for literature exploration. Drawing from Pathfinder's deployment (pfd.r.app) and user feedback from the astronomy community, I will highlight how interpretable intermediate representations such as semantic embeddings and citation graphs can lend interpretability and rigor to otherwise black-box models, and help their adoption in research pipelines. Beyond astronomy, the development of these methods have broader implications for AI-assisted scientific discovery across disciplines. I will conclude by discussing open challenges in adapting large models in scientific contexts, the importance of retrieval mechanisms that preserve provenance, and the potential for LLM-powered tools to not just assist with literature review, but to help generate testable hypotheses and identify research gaps. As scientific publishing continues to accelerate across all fields, developing trustworthy and grounded systems for navigating the literature becomes increasingly essential.

Keynote Talk Invited 2

Karin Verspoor

Royal Melbourne Institute of Technology

2025-12-23 12:00:00 –

Abstract: Impacts of AI on the Scientific Ecosystem"

Artificial Intelligence, in both predictive and generative forms, is increasingly being adopted to support — and in some cases, entirely perform — scientific research. In this talk, I will discuss both the significant opportunities that AI brings to science and the questions that AI raises for science. The talk will be grounded in some of my own work in use cases including bio-curation and literature-based discovery, as well as ongoing work exploring the limitations of LLMs, that may have particular impacts in the scientific arena.

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