

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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317 Sidney Baker St. S
Suite 400 - 134
Kerrville, TX 78028
USA
Tel: +1-855-225-1962
acl@aclweb.org

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Introduction

We are excited to welcome you to WASP at IJCNLP-AACL 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 AACL-IJCNLP 2022 and the Second WIESP at IJCNLP-AACL 2023, the Third Workshop on Artificial intelligence for Scientific Publications (WASP) at IJCNLP-AACL 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 (pfdr.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.

Table of Contents

<i>Overview of the Third Workshop for Artificial Intelligence for Scientific Publications</i>	
Kelly Lockhart, Alberto Accomazzi, Felix Grezes and Tirthankar Ghosal	1
<i>Overview of TRACS: the Telescope Reference and Astronomy Categorization Dataset & Shared Task</i>	
Felix Grezes, Jennifer Lynn Bartlett, Kelly Lockhart, Alberto Accomazzi, Ethan Seefried, Anjali Pandiri and Tirthankar Ghosal	5
<i>Exploring Health Misinformation Detection with Multi-Agent Debate</i>	
Chih-Han Chen, Chen-Han Tsai and Yu-Shao Peng	16
<i>Zero-Shot Cross-Sentential Scientific Relation Extraction via Entity-Guided Summarization</i>	
Vani Kanjirangat and Fabio Rinaldi	22
<i>Finding the Paper Behind the Data: Automatic Identification of Research Articles related to Data Publications</i>	
Barbara McGillivray, Kaveh Aryan, Viola Harperath, Marton Ribary and Mandy Wigdorowitz	34
<i>A benchmark for end-to-end zero-shot biomedical relation extraction with LLMs: experiments with OpenAI models</i>	
Aviv Brokman, Xuguang Ai, Yuhang Jiang, Shashank Gupta and Ramakanth Kavuluru	44
<i>Bridging the Gap: Instruction-Tuned LLMs for Scientific Named Entity Recognition</i>	
Necva Bölcü, Maciej Rybinski and Stephen Wan	56
<i>Metadata Generation for Research Data from URL Citation Contexts in Scholarly Papers: Task Definition and Dataset Construction</i>	
Yu Watanabe, Koichiro Ito and Shigeki Matsubara	72
<i>Dynamic Reference Extraction and Linking across Multiple Scholarly Knowledge Graphs</i>	
Nicolau Duran-Silva and Pablo Accuosto	80
<i>AI for Data Ingestion into IPAC Archives</i>	
Nicholas Susemiehl and Joseph Mazzarella	87
<i>A Hybrid LLM and Supervised Model Pipeline for Polymer Property Extraction from Tables in Scientific Literature</i>	
Van-Thuy Phi, Dinh-Truong Do, Hoang-An Trieu and Yuji Matsumoto	94
<i>TeG-DRec: Inductive Text-Graph Learning for Unseen Node Scientific Dataset Recommendation</i>	
Ammar Qayyum, Bassamtiano Irnawan, Fumiyo Fukumoto, Latifah Kamarudin, Kentaro Go and Yoshimi Suzuki	103
<i>Structured Outputs in Prompt Engineering: Enhancing LLM Adaptability on Counterintuitive Instructions</i>	
Jingjing Ye, Song Bai, Zhenyang Li and Zheqi Zone	115
<i>Atlas: Customizing Large Language Models for Reliable Bibliographic Retrieval and Verification</i>	
Akash Kodali, Hailu Xu, Wenlu Zhang and Xin Qin	121
<i>Automated Telescope-Paper Linkage via Multi-Model Ensemble Learning</i>	
Ojaswa Ojaswa Varshney, Prashasti Vyas, Priyanka Goyal, Tarpita Singh, Ritesh Kumar and Mayank Singh	127

<i>Systematic Evaluation of Machine Learning and Transformer-Based Methods for Scientific Telescope Literature Classification</i>	
Huynh Trung Kiet, Dao Sy Duy Minh, Tran Chi Nguyen, Nguyen Lam Phu Quy, Pham Phu Hoa, Nguyen Dinh Ha Duong, Dinh Dien and Nguyen Hong Buu Long	136
<i>“Clutch or Cry” Team at TRACS @ WASP2025: A Hybrid Stacking Ensemble for Astrophysical Document Classification</i>	
Arshad Khatib, Aayush Prasad, Rudra Trivedi and Shrikant Malviya	146
<i>amc: The Automated Mission Classifier for Telescope Bibliographies</i>	
John F. Wu, Joshua E.G. Peek, Sophie J. Miller, Jenny Novaceescu, Achu J. Usha and Christopher A. Wilkinson	157
<i>AstroMLab 5: Structured Summaries and Concept Extraction for 400,000 Astrophysics Papers</i>	
Yuan-Sen Ting, Alberto Accomazzi, Tirthankar Ghosal, Tuan Dung Nguyen, Rui Pan, Zechang Sun and Tijmen de Haan	170
<i>Citation Drift: Measuring Reference Stability in Multi-Turn LLM Conversations</i>	
Gokul Srinath Seetha Ram	186
<i>Efficient Context-Limited Telescope Bibliography Classification for the WASP-2025 Shared Task Using SciBERT</i>	
Madhusudhan Naidu	192
<i>Encoder Fine-tuning with Stochastic Sampling Outperforms Open-weight GPT in Astronomy Knowledge Extraction</i>	
Shivam Rawat, Lucie Flek and Akbar Karimi	195
<i>Enhanced Table Structure Recognition with Multi-Modal Approach</i>	
Huichen Yang, Andrew D. Hellicar, Maciej Rybinski and Sarvnaz Karimi	201