

# 2026 IEEE 9th International Conference on PATTERN RECOGNITION AND ARTIFICIAL INTELLIGENCE

## SPECIAL SESSION 11

### AI-Driven Technologies for Astronomical Data Analysis and Cosmic Discovery

With the rapid growth of data generated by modern telescopes and astronomical facilities, there is an increasing demand for advanced computational technologies. Deep learning and artificial intelligence (AI) have become essential tools for processing, analyzing, and interpreting massive astronomical datasets. This special session focuses on the development and application of AI methods in astronomy, including astronomical image processing, modeling and simulation of cosmic phenomena, data mining, and predictive analytics. The session aims to bring together researchers and practitioners from both AI and astronomy communities to exchange innovative solutions addressing challenges such as exoplanet discovery, cosmic phenomenon simulation, large-scale dataset visualization, and the integration of AI with telescope operations. Ethical considerations and best practices for AI-driven astronomy will also be discussed. Through this session, participants will explore how AI can transform astronomical research and drive new scientific discoveries in cosmology and astrophysics.

#### Related Topics

Topics of interest include, but are not limited to:

1. Intelligent deep learning architectures for astronomical image analysis and restoration
2. AI-enabled modeling, simulation and reconstruction of cosmic structures and phenomena
3. Big data mining and knowledge discovery from massive astronomical data repositories
4. Machine learning for exoplanet identification, detection and physical characterization
5. Intelligent integration and autonomous operation of AI systems with astronomical observatories
6. Transfer learning, self-supervised learning and few-shot learning for astronomical data
7. Advanced visualization and interactive analytics for large-scale astronomical datasets
8. Predictive modeling and data-driven inference in cosmology and astrophysics
9. Cross-disciplinary collaboration, capacity building and community practices between AI and astronomy
10. Ethical challenges, fairness, transparency and responsible use of AI in space research

#### Important Date

Final Submission Deadline	July 05, 2026
Final Notification Date	July 20, 2026
Final Registration Deadline	July 25, 2026

\* The review period for submissions is typically one month.

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PRAI

August 14-16, 2026

Shanghai, China



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#### Submission Way

##### Submit Online:

<https://www.easychair.org/conferences/?conf=prai2026>

(Please choose Special Session 11)

Paper Templates:

Latex:

<https://www.prai.net/ieee-conference-latex-template.zip>

Word:

<https://www.prai.net/instruct8.5x11x2.doc>

For General inquire please contact:

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Wechat: lconf-ras send "PRAI 2026"

#### Publication



IEEE

Accepted papers will be published in PRAI 2026 Conference Proceedings, and submitted for inclusion into IEEE

Xplore and indexed by EI Compendex & Scopus.

PRAI 2026 is listed in IEEE Official Conference Calendar:  
[https://conferences.ieee.org/conferences\\_events/conferences/conferencedetails/70962](https://conferences.ieee.org/conferences_events/conferences/conferencedetails/70962)

