2026 第九届 IEEE 国际无人系统大会
特邀专题简介表

特邀专题名称
空天多模态遥感图像的智能处理与可信识别

组织者

1. 蒋雯，教授，西北工业大学

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个人简介

蒋雯，西北工业大学教授，博士生导师，国家级领军人才，空天电子信息感知与光电控制教育部重点实验室副主任，中国指挥与控制学会理事、信息融合专委会副主任委员、多域态势感知与认知专委会常务委员、指挥与控制网络专委会常务委员，出版学术专著 3 部，授权发明专利 40 余项，第一或通讯作者发表 SCI 论文 80 余篇，第一完成人获中国指挥与控制学会科技进步一等奖、国防科技进步二等奖和陕西省科学技术二等奖各一项，入选 2020、2021 年科睿唯安"全球高被引科学家"。

耿杰，西北工业大学副教授，博士生导师，CICC 青工委委员。长期致力于多模态遥感智能解译、人工智能等领域科研工作。在 IEEE Transactions on Geoscience and Remote Sensing、ISPRS Journal of Photogrammetry and Remote Sensing、IEEE Transactions on Circuits and Systems for Video Technology、自动化学报等国内外高水平期刊发表 40 余篇论文，授权发明专利 10 余项。主持国家自然科学基金、国家重点研发计划子课题、陕西省重点研发计划项目等国家和省部级项目 10 余项。

邓鑫洋，西北工业大学副教授，博士生导师，CICC 青工委委员、信息融合专委会委员。从事智能算法安全、多源信息融合等领域研究，近年来先后主持或参与国家自然科学基金、国家科技重大专项等国家和省部级项目十余项，以第一作者或通讯作者身份发表学术论文 50 余篇，出版学术专著 3 部，申请国家发明专利 30 余项，获中国指挥与控制学会科技进步一等奖、国防科学技术进步二等奖、陕西省科学技术二等奖等奖励，入选科睿唯安全球高被引科学家。

周千里，西北工业大学副教授，硕士生导师，首届中国科协青年人才托举工程博士生专项入选者。研究方向为多源信息感知与融合、量子与经典不确定信息处理。以第一作者或通讯作者发表学术论文 30 余篇，主持或参与自然科学基金、78 批博士后面上项目等多项国家和省部级项目。博士学位论文入选中国航空学会研究生学位论文托举工程，获得第十届、第十二届中国信息融合大会优秀论文。担任《Data Science and Management》期刊青年编委。

特邀专题简介

空天多模态遥感图像是通过卫星、无人机、航空器等平台获取的地球表面影像数据，具有覆盖广、时效性强、多模态等特点。随着人工智能技术的突破，多模态遥感图像的智能处理与可信识别成为研究热点，广泛应用于环境监测、灾害响应、军事侦察等领域。空天多模态遥感图像的智能处理，包括了图像增强、图像分类、语义分割、目标识别、变化检测等关键技术，而可信识别指的是确保结果可靠、可解释且安全，涉及不确定性量化、模型可解释性、对抗攻击防御等关键技术。空天多模态遥感图像通常数据量大、多源异构、动态变化，提升数据质量、算法泛化性、模型可解释性、处理时效性成为应用发展中的关键问题。

本特邀专题邀请以下与"空天多模态遥感图像的智能处理与可信识别"主题相关的包含创新思想、概念、新发现、改进以及新应用的原创论文。

• 无人机图像处理

• 遥感图像目标检测识别

• 遥感图像语义分割

- 多模态遥感图像变化检测
- 多模态遥感图像融合
- 跨域遥感图像智能解译
- 人工智能算法安全
- 遥感图像可信识别

IEEE ICUS 2026
Invited Session Summary

Title of Session

Intelligent Processing and Trustworthy Identification of Aerospace Multimodal Remote Sensing Images

Organizers

1. Prof. Wen Jiang

Northwestern Polytechnical University, China

2. Dr. Jie Geng

Northwestern Polytechnical University, China

3. Dr. Xinyang Deng

Northwestern Polytechnical University, China

4. Dr. Qianli Zhou

Northwestern Polytechnical University, China

Biosketches of Organizers

Wen Jiang, Professor at Northwestern Polytechnical University, Doctoral Supervisor, National Leading Talent. She serves as the Deputy Director of the Key Laboratory of Aerospace Electronic Information Perception and Optoelectronic Control of the Ministry of Education, the Director of the Chinese Institute of Command and Control (CICC), Vice Chairman of the Information Fusion Committee, Executive Member of the Command and Control Network Committee, and the Member of the Information Fusion Branch of Chinese Society of Aeronautics and Astronautics. She mainly engaged in research on information fusion, uncertain artificial intelligence, and intelligent algorithm security. She has published three academic monographs and authorized 40 invention patents, and over 80 SCI papers, of which 20 have been selected as highly cited or hot topic papers in ESI. As the first completed person, she has won the first prize of CICC Science and Technology Progress Award, the second prize of National Defense Science and Technology Progress Award, and the second prize of Shaanxi Province Science and Technology Award. She was selected as a "Highly Cited Researchers" by Clarivate in 2020 and 2021.

Jie Geng, Associate Professor at Northwestern Polytechnical University, Doctoral Supervisor, and Member of the CICC Youth Working Committee. He mainly engaged in research on multimodal remote sensing intelligent interpretation, and artificial intelligence. He has published more than 40 papers in high-level domestic and international journals such as IEEE Transactions on Geoscience and Remote Sensing, ISPRS Journal of Photography and Remote Sensing, IEEE Transactions on Circuits and Systems for Video Technology, Journal of Automation, and more than 10 authorized invention patents. He has hosted in more than 10 national and provincial level projects, including the National Natural Science Foundation of China, the National Key Research and Development Sub-project, and the Shaanxi Provincial Key Research and Development Program.

Xinyang Deng, Associate Professor at Northwestern Polytechnical University, Doctoral Supervisor, and Members of CICC Youth Working Committee, CICC Information Fusion Committee. His research areas include intelligent algorithms security, multi-source information fusion and so on. He has hosted or participated more than 10 national and provincial level projects including National Natural Science Foundation of China and National Science and Technology Major Project, and published 3 academic monographs and more than 50 academic papers, authorized over 30 invention patents. He has won the first prize of CICC Science and Technology Progress Award, the second prize of National Defense Science and Technology Progress Award, second prize of Shaanxi Province Science and Technology Award, and selected as a "Highly Cited Researchers" by Clarivate.

Qianli Zhou, Associate Professor at Northwestern Polytechnical University and Master's Supervisor, was selected for the Young Elite Scientists Sponsorship Program by CAST (Doctoral Student Special Program). His research areas include multi-source information perception and fusion, as well as quantum and classical uncertainty information processing. He has published more than 30 academic papers as first or corresponding author. He has hosted or participated in several national and provincial research projects, including those funded by the National Natural Science Foundation of China and the China Postdoctoral Science Foundation. His doctoral dissertation was selected for the Graduate Thesis Support Program of the Chinese Society of Aeronautics and Astronautics. He has received the Best Paper Award at the 10th and 12th China Information Fusion Conference. He currently serves as a Young Editorial Board

Member of the journal Data Science and Management.

Details of Session

Aerospace multimodal remote sensing images are acquired by satellite, UAV, aircraft and other platforms with the earth surface data, which has the characteristics of wide coverage, strong timeliness, multi-mode and so on. With the breakthrough of artificial intelligence technology, intelligent processing and trusted identification of multimodal remote sensing images have become a research hotspot, which are widely used in environmental monitoring, disaster response, military reconnaissance and other fields. Intelligent processing of aerospace remote sensing images includes image enhancement, image classification, semantic segmentation, target recognition, change detection and other key technologies. Trusted identification refers to ensuring that the results are reliable, interpretable and secure, which involves some key technologies such as quantification of uncertainty, interpretability of models, and counterattack defense. Aerospace multimodal remote sensing images usually have large amount of data, heterogeneous multi-sources and dynamic changes, so improving data quality, algorithm generalization, model interpretability and processing timeliness have become key issues in application development.

The invited session invites original papers of innovative ideas and concepts, new discoveries and improvements, and novel applications relevant to the following selected topics of "Intelligent Processing and Trustworthy Identification of Aerospace Multimodal Remote Sensing Images".

- UAV Image Processing
- Remote Sensing Image Target Detection
- Remote Sensing Image Semantic Segmentation
- Multimodal Remote Sensing Image Change Detection
- Multimodal Remote Sensing Image Fusion
- Cross-Domain Remote Sensing Image Intelligent Interpretation
- Security for Artificial Intelligence Algorithm
- Trustworthy Remote Sensing Image Recognition