



CALL FOR PAPERS
IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing
Special Issue on
“Deep learning-based techniques for Radar imaging in remote sensing applications”

In the past, radar imaging processing mainly relied on the “physical model” or “statistical model”. Recent advances in deep learning are increasingly being applied in modern radar imaging. A wide range of deep learning techniques can be applied to enhance the effectiveness and efficiency of radar imaging systems, thus redefining the state-of-the-art radar imaging algorithms. There are compelling challenges that remain to be addressed, ranging from learning theory to imaging applications.

This special issue invites recent papers on novel deep learning-based radar imaging pipelines including novel deep learning-based radar imaging system design, deep learning-based radar imaging system hardware design, deep learning-based radar imaging algorithms, novel applications of deep learning-based radar imaging techniques, etc. Besides, this special issue will promote recent works on deep learning theory for radar imaging, including performance guarantees, convergence analysis, learning model analysis, etc., which are critical for reliable radar imaging systems.

The broad topics include (but are not limited to):

- Novel deep learning-based radar imaging system for remote sensing applications, e.g., novel earth observation system design related to deep learning-based radar imaging, etc.
- Novel deep learning-based radar imaging system hardware for remote sensing applications, e.g., signal processing framework suitable for deep learning-based earth observation radar imaging, hardware design and realization of deep learning-based earth observation radar imaging, etc.
- Deep learning-based Modeling and Algorithm for radar imaging in remote sensing applications, e.g., synthetic aperture radar (SAR) imaging, interferometric SAR imaging, inverse SAR imaging, SAR moving target imaging, SAR autofocus, SAR tomography, 3-dimensional SAR imaging, etc.
- Deep learning-based radar image processing for remote sensing applications
- Deep learning architectures for radar data analysis for remote sensing applications
- Deep learning theory for radar imaging in remote sensing applications, e.g., theoretical boundaries on the performance of deep learning-based earth observation radar imaging approaches, convergence of deep learning-based earth observation radar imaging approaches, and theoretical boundary conditions of deep learning-based earth observation radar imaging approaches, etc.
- Novel applications of deep learning-based radar imaging techniques, e.g. deep learning-based earth observation radar imaging techniques applied in remote sensing, etc.

Schedule

Dec 1, 2024, Submission system opening
Jun 30, 2025, Submission system closing

Format

All submissions will be peer reviewed according to the IEEE Geoscience and Remote Sensing Society guidelines. Submitted articles should not have been published or be under review elsewhere. Submit your manuscript on <http://mc.manuscriptcentral.com/jstars>, using the Manuscript Central interface and select the “**Deep learning-based techniques for Radar imaging in remote sensing applications**” special issue manuscript type. Prospective authors should consult the site <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9082768> for guidelines and information on paper submission. All submissions must be formatted using the IEEE standard format (double column, single spaced). Please visit http://www.ieee.org/publications_standards/publications/authors/author_templates.html to download a template for transactions. Please note that since Jan. 1, 2024, IEEE J-STARS, as a fully open-access journal, is charging a flat publication fee \$1,496 per paper.

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