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IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing

Special Issue on
“Ground Penetrating Radar and Artificial Intelligence Technology: Innovation and Applications”

The primary aim of this special issue is to bring together the state-of-the-art research, innovation, and applications of Ground Penetrating Radar (GPR) and Artificial Intelligence (AI) technology. GPR is a well-received non-destructive technology and tool, whose capability in detecting, classification and evaluating subsurface targets makes it of great importance in various terrestrial fields, ranging from civil engineering and the detection of municipal underground infrastructure, to archaeology and the classification of subglacial/basal materials in polar regions. The recent speedy development of AI technologies (machine learning, deep learning, etc.) provides a great opportunity to develop reliable, accurate and time-effective processing solutions to advance most of the current and emerging Earth observation and remote sensing technologies. By combining the prowess of GPR's non-destructive subsurface imaging with the intelligence of AI-driven data interpretation, we can better understand the underlying complexities of different materials and develop more efficient, accurate, and reliable solutions. This special issue invites contributions from researchers, practitioners, and academics to showcase their original research, case studies, or review articles that explore the integration of GPR and AI technology. We encourage submissions that demonstrate the potential of combining these technologies to solve real-world problems, improve existing methodologies, or create new applications.

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

- AI-driven GPR data processing and interpretation.
- Advancements in GPR hardware w/wo assistance by AI-driven signal processing.
- GPR-AI in autonomous systems.
- GPR-AI integration for civil engineering and infrastructure management.
- Environmental and geological applications.
- Archaeological and cultural heritage applications.
- Agriculture and forestry applications.
- Multi-modal data fusion.
- Future trends, challenges, and opportunities.

Schedule

1 July 2023, Submission system opening
28 Feb 2024, 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 “**Ground Penetrating Radar and Artificial Intelligence Technology: Innovation and 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 as of Jan. 1, 2020, IEEE J-STARS has become a fully open-access journal charging a flat publication fee \$1,250 per paper.

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