Sensors and Materials

Advanced GeoAI for Smart Cities: Novel Data Modeling with Multi-source Sensor Data

Call for Papers

The vision of Smart Cities relies on the insights derived from the vast amount of data generated by a proliferating array of sensors. These include not only traditional remote sensors on satellites and airborne platforms but also ground-based IoT sensors and the emerging paradigm of social sensing from mobile devices and digital platforms. Integrating these multi-source sensor data streams is crucial for a dynamic and holistic understanding of urban environments. Geographic Artificial Intelligence offers powerful tools to model and analyze this deluge of sensor data. This special issue addresses the critical need to develop novel data modeling and analytic paradigms that can effectively harness the synergies between diverse sensor data sources to solve complex urban challenges.

This special issue aims to showcase cutting-edge research on advanced GeoAI methodologies specifically designed for multi-source sensor data in smart city applications. We seek contributions that present innovative approaches to data fusion, feature extraction, and spatiotemporal modeling from heterogeneous sensor networks. The issue will highlight how these novel paradigms can improve urban monitoring, management, and sustainability.

Scope:

- Novel AI models for fusing remote sensing, IoT sensor, and social sensing data.
- Spatiotemporal analysis of high-frequency sensor data streams for urban dynamics.
- Edge computing and lightweight AI models for real-time sensor data processing.
- AI-powered digital twins fed by multi-source sensor data.
- Anomaly detection and event prediction using urban sensor networks.
- Privacy-preserving AI methods for analyzing sensitive sensor data.
- Dynamic monitoring, analysis, and prediction in urban infrastructure, environmental, biological, and other social fields
- Sensor-related or geospatial information (such as remote sensing images) related to smart city applications
- Urban resilience theory and application
- Carbon-neutral research cases or methods

Submission due date: Feb. 28, 2026
Publication date (planned): May. 31, 2026
Journal website: http://myukk.org/

Guest Editor:
Prof. Changfeng Jing, Ph.D.
School of Artificial Intelligence, China University of Geosciences Beijing, China
E-Mail: jingcf@cugb.edu.cn
Interests: GIScience, urban informatics, urban computing, GeoAI, street views

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If you have any questions, please feel free to contact the editorial staff at the address below.

Editorial Department of Sensors and Materials
MYU K.K.
1-23-3-303 Sendagi, Bunkyo-ku, Tokyo 113-0022, Japan
Tel: +81-3-3827-8549, Fax: +81-3-3827-8547
E-mail: myukk@myu-inc.jp