Special Issue

Application of Machine Learning and Satellite Remote Sensing in Flood Risk Assessment

Message from the Guest Editors

Floods constitute one of the most costly natural disasters worldwide, leading to loss of life, extensive damage to housing and livelihoods, and profound impacts on biodiversity. The integration of machine learning with remote sensing imagery enables more accurate and sophisticated analyses of the spatial and temporal dynamics of flooding. This Special Issue invites contributions that advance the state of the art of machine learning applications to remote sensing for flood monitoring, mapping, and risk assessment. We welcome original research articles, reviews, and case studies. Potential themes for submission include, but are not limited to, the following:

- Deep learning approaches for flood detection and mapping;
- Real-time flood forecasting and early warning systems;
- Multi-sensor data fusion (e.g., optical, SAR, LiDAR, UAV imagery);
- Spatio-temporal modelling of flood dynamics;
- Transfer learning and domain adaptation for flood-prone regions;
- Integration of remote sensing and socio-economic data for risk assessment;
- Advances in cloud-based and high-performance computing for large-scale flood analysis;
- Case studies demonstrating operational applications and decision-support systems

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Message from the Editor-in-Chief

In the context of global changes, the sustainable management of water cycles, going from global and regional water cycles to urban, industrial and agricultural water cycles, plays a very important role on the water resources and on their relationships with food, energy, biodiversity, ecosystem functioning and human health. *Water* invites authors to provide innovative original full articles, critical reviews and timely short communications and to propose special issues devoted to new technological and scientific domains and to interdisciplinary approaches of the water cycles. We ensure a critical review process and a quick turnaround between submission and final decision.

Editor-in-Chief

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