

Special Issue

Computer Vision-Based Monitoring of Aquatic Ecosystems Across Marine and Freshwater Environments

Message from the Guest Editors

This Special Issue aims to highlight state-of-the-art computer vision applications for monitoring aquatic organisms across the hydrosphere, including marine, freshwater, and transitional water environments. We particularly focus on vision-based analysis of aquatic animals, aquatic plants, benthic organisms, and habitat structures using advanced methods such as object detection, semantic and instance segmentation, image enhancement, and multimodal data fusion.

The Special Issue welcomes studies leveraging diverse data sources, including underwater imagery, unmanned aerial vehicles (UAVs), manned aircraft, and satellite observations. Contributions may address methodological innovations, system development, field applications, and integrated monitoring frameworks that support sustainable aquatic resource management, biodiversity conservation, and environmental assessment. By bridging computer vision, remote sensing, and aquatic ecology, this Special Issue seeks to advance intelligent monitoring solutions that enhance our ability to observe, understand, and sustainably manage aquatic ecosystems under increasing environmental pressures.

Guest Editors

Dr. Fan Zhao

Department of Urban Informatics, Shenzhen University, Shenzhen, China

Dr. Jiaqi Wang

Department of Environment Systems, The University of Tokyo, Kashiwa 288-8561, Japan

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
water@mdpi.com

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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

Dr. Jean-Luc PROBST

Centre de Recherche sur la Biodiversité l'Environnement (CRBE) UMR CNRS/UPS/INPT/IRD, Centre National de la Recherche Scientifique (CNRS), University of Toulouse, Campus ENSAT, Auzeville Tolosane, Toulouse, France

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