Special Issue

Structural Health Monitoring Based on Deep Learning and Image Processing

Message from the Guest Editors

Structural health monitoring (SHM) is a vital technology for ensuring the safety, functionality, and longevity of critical components and systems across a wide spectrum of engineering domains. With recent advances in artificial intelligence, particularly deep learning and image processing, SHM has entered a new era of intelligent, data-driven assessment capable of detecting subtle defects and predicting failures in real time. This Special Issue aims to present cutting-edge research on SHM methods that integrate deep learning algorithms and image-based techniques across diverse engineering disciplines. Topics of interest include, but are not limited to, the following:

- Image- and video-based defect detection (e.g., cracks, corrosion, and delamination);
- Deep learning for damage localization, classification, and prognosis;
- Computer vision and 3D reconstruction for surface and volumetric monitoring;
- Multi-modal sensor fusion combining visual, acoustic, and vibration data;
- UAV and robotic visual inspection systems powered by AI;
- Transfer learning, domain adaptation, and lightweight models for real-time SHM;
- Case studies and field applications in complex operational environments.

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Message from the Editor-in-Chief

Electronics is a multidisciplinary journal designed to appeal to a diverse audience of research scientists, practitioners, and developers in academia and industry. The journal is devoted to fast publication of latest technological breakthroughs, cutting-edge developments, and timely reviews of current and emerging technologies related to the broad field of electronics. Experimental and theoretical results are published as regular peer-reviewed articles or as articles within Special Issues guestedited by leading experts in selected topics of interest.

Editor-in-Chief

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