Special Issue

3D Sensing, Semantic Reconstruction and Modelling

Message from the Guest Editor

The key challenge for autonomous systems is the perception of the environment in real-time both in terms of geometry and semantics, enabling truly intelligent applications in areas such as robotics and XR. Recent machine learning and computer vision developments, together with the advancement of different 3D-sensing technologies, show great potential towards achieving this vision. Starting from the unstructured 3D sensor and 2D camera data, ongoing research currently focuses on semantic and relational mapping as well as geometric prior information utilization toward building accurate, rich, and compact digital representations of the environment. This Special Issue will be a collection of state-of-the-art contributions on topics including, but not limited to:

- 3D/depth sensing (ToF, lidar, radar);
- Semantic segmentation and reconstruction;
- Machine learning on 3D data (point clouds, depth maps);
- Hybrid methods (machine learning + geometric computer vision);
- 3D scan to model (scan-to-digital twin, scan-to-BIM);
- SLAM and scene graphs;
- Neural fields.

Guest Editor

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Deadline for manuscript submissions

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Message from the Editor-in-Chief

Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

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