



## 3D Sensing, Semantic Reconstruction and Modelling

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Deadline for manuscript  
submissions:

**closed (20 May 2023)**

### Message from the Guest Editor

Dear Colleagues,

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.





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## Message from the Editor-in-Chief

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