



Call for Papers

IEEE Open Journal of Instrumentation and Measurement (IEEE OJIM)

Special Section on

Vision-Based and Deep Learning Measurement Methods for Industry Systems

Vision-Based Measurement (VBM) is a promising technology for monotonous and repetitive vision activities, due to its ability to process, analyze and understand visual content, including 2D images and videos, 3D point cloud images, etc. In the era of Industry 4.0, incorporating Artificial Intelligence, especially Deep Learning (DL), into VBM has achieved great success in many areas, such as robotic surgery, medical image analysis, oil and gas industry, bridges and buildings, roads, and railways. However, several significant challenges still remain. For example, fault data are commonly hard to collect in real industrial scenarios, which makes classification model training difficult. The interpretability of DL is not strong and cannot provide feasible and theoretical guidance for infrastructure maintenance. Therefore, developing advanced DL frameworks and VBM will enable manufacturers to further the technologies and applications of Industry 4.0.

This special section focuses on advanced DL-based VBM. Both original research and review articles are welcome. The topics include, but are not limited, to the following:

- Sensing techniques with DL
- Virtual, augmented, and mixed reality VBM in Industry 4.0 applications and services
- Localization, mapping, and navigation techniques with DL
- Object detection with transfer learning
- Data augmentation/generation technology with adversarial learning technology
- Anomaly detection methods under data imbalance conditions
- Explainable DL for measurement
- Control systems with reinforcement learning
- Hardware acceleration for DL models

Each accepted paper for this Special Section will receive an Open Access fee waiver; i.e., accepted papers will not be charged Open Access fee.

Deadlines

Submission: July 1, 2023
First decision: August 1, 2023
Final decision: September 1, 2023
Publication Volume: 2023

For more info and submission instructions, please visit OJIM's official website: <http://ojim.ieee-ims.org/>

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