

Special Issue on Structural Health Monitoring Based on Computer Vision and Machine Learning

Preface

Structural health monitoring (SHM) of civil infrastructures mainly aims to conduct structural condition monitoring, structural damage/abnormality detection, and structural safety evaluation/warning based on the long-term monitoring data from a variety of sensors installed on the structure. Through extracting and mining the patterns and rules inherent in the original multi-source heterogeneous field monitoring data, it will not only help us accurately and effectively grasp the structural service condition and long-term deterioration characteristics of the target structure, and also timely issue the warning information and make the inspection, repair and strengthening decisions. In recent years, along with the significant improvement of novel algorithms, frameworks and computing capacity, computer vision and machine learning-based data processing approaches have gained dramatic growth and applied to automatically process big data, especially deep learning-based image data processing. This special issue is devoted to present the state-of-the-art research works for structural monitoring of various kinds of civil infrastructures based on computer vision and machine learning.

This special issue contains the extended version of selected papers that were presented at the International Conference on Digital Image Correlation and Noncontact Experimental Mechanics held on 15-18 October 2018 in Hangzhou, China, organized by the guest editors. A total of 21 papers have been finally accepted and included in this special issue after a rigorous peer review process.

The guest editors are grateful to all the authors for contributing their latest research works to this special issue. We would like to express our sincere appreciation to the reviewers for their valuable and insightful comments. The guest editors also thank three Editor-in-Chiefs of SSS for their great support in organizing this special issue.

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