CALL FOR PAPERS

Special Issue: Computer Vision and Big Data Analytics for Remote Sensing

Photogrammetric Engineering & Remote Sensing - PE&RS

Overview

Rapid advances in sensor technology, field robotics, unmanned aerial systems (UAS), and computing power have facilitated exponential growth of remote sensing applications. Meanwhile, processing complex, multiscale, and multidimensional data from UAS, environmental sensors and climate model simulations has become increasingly difficult for both scientists and public to summarize and visualize the large amount of data for agricultural and environmental assessments with direct applications to education, training and decision-making. Data generated by thousands of images collected in a single UAS flight is almost impossible to manually analyze. There exist both numerous opportunities and challenges with broader usage of multi-sensor remote sensing data, mostly attributed to processing algorithms of ultra-high resolution imagery, translating the abundant spectral and spatial data to information useful for decision-making. Computer vision, as a multidisciplinary field, seeks to mimic human visual system for automatic extraction, analysis, and interpreting useful information from images or a sequence of video or image frames. And it offers promising analytical solutions for diverse fields of studies concerned with Big Data. This Special Issue focuses on advancing research in computer vision and big data analytics for remote sensing applications to address the state-of-the-art technical and application challenges.

Topics of Interest

The potential topics includes, but not limited to:

- Precision Agriculture
- Aerial phenotyping
- Automatic crop monitoring using unmanned aerial systems
- Sensors and field robots
- Vegetation stress detection
- Machine Learning
- Computer vision based data fusion for remote sensing
- Object detection and classification using remotely sensed data
- Change detection using multi-temporal data
- Super-resolution image reconstruction
- Image contrast enhancement
- Image registration
- 3D surface modeling and reconstruction
- High-performance computing paradigm for remote sensing applications
- Dimensionality reduction for remote sensing data
- Spatial and spectral feature extraction methods

- Noise modelling and estimation
- Big Data analytics
- Data visualization
- Augmented and Virtual Reality with remote sensing data

Submission Guideline

Innovative research, application, and comprehensive reviews are welcome to present in this issue, however, the submitted manuscripts should not have been published, nor be under consideration for publication elsewhere. All manuscripts will be peer-reviewed following the PE&RS reviewing procedures.

Guest Editors

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Important Dates

- Initial submission due: October 31, 2017
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