

Call for Papers
IEEE Signal Processing Society
IEEE Journal of Selected Topics in Signal Processing

Special Issue on Filtering and Segmentation in Mathematical Morphology

Historically, mathematical morphology was the first consistent non-linear image analysis theory, which from the very start included not only theoretical results but also many practical aspects. Mathematical morphology is a complete theory, capable of handling the most varied image types, in a way that is often subtle yet efficient. It can also be used to process general graphs, surfaces, implicit and explicit volumes, manifolds, time or spectral series, in both deterministic and stochastic contexts. In the last five years, connected signal representations and connected operators have emerged as tools for segmentation and filtering, leading to extremely versatile techniques for solving problems in a variety of domains including biology, computer and information science, geo-science, and image and signal analysis and processing. This special issue aims at bringing novel contribution and state-of-art research progress focusing on filtering and segmentation in mathematical morphology.

We invite original and unpublished research contribution with a clear and strong slant towards mathematical morphology for filtering and/or segmentation and their applications. The topics of interest include, but are not limited to:

- Theoretical mathematical morphology for filtering and segmentation: Lattice theory - Representation of morphological operators - Fuzzy morphology - Connectivity theory – Adaptive morphology - Graph-based methods - Geometry and Topology
- Signal Processing: Level set methods - Morphological PDEs - Morphological wavelets - Multiresolution and scale spaces
- Efficient and theoretically proven representations for image segmentation and filtering
- Multispectral and color-based segmentation and filtering
- Color image segmentation - Hierarchical segmentation - Texture segmentation - Watershed segmentation - Clustering of spatial data;
- Algorithms and Architectures: Efficient implementations - Data structures for morphology - Performance evaluation of algorithms - GPU implementations
- Applications of mathematical morphology in: - Geoscience and remote sensing - Material science - Medicine and biology - Industrial control - ICT and Multimedia - Content-based information retrieval, and information science - Document processing

Prospective authors should visit for <http://www.signalprocessingsociety.org/publications/periodicals/jstsp> for information on paper submission. Manuscripts should be submitted using the Manuscript Central system at <http://mc.manuscriptcentral.com/jstsp-ieee>. Manuscripts will be peer reviewed according to the standard IEEE review process.

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| Manuscript submission due: | Feb. 6, 2012 |
| First review completed: | Mar. 20, 2012 |
| Revised manuscript due: | Apr. 20, 2012 |
| Second review completed: | Jul. 20, 2012 |
| Final manuscript due: | Aug. 6, 2012 |

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