



Mathematical Problems in Engineering

Special Issue on **Advances in Computational Imaging: Theory, Algorithms, and Systems**

CALL FOR PAPERS

Computational imaging has emerged as an important and popular research area in recent years. Unlike conventional imaging, in which an image is formed directly at the detector, computation is inherently integrated in the image formation process of computational imaging. In addition, the unique paradigm of data acquisition and image reconstruction marries optical engineering and mathematics in computational imaging. Compared with conventional imaging, this union provides attractive advantages, such as imaging speed, signal-to-noise ratio, and information throughput. Leveraging novel mathematical models and algorithms with rapidly advancing hardware, computational imaging is versatile in a myriad of applications, especially where conventional imaging systems are inapplicable.

This special issue will present recent progress in computational imaging and advance the state of the art of this appealing area. Papers will cover broad aspects of computational imaging from both mathematical and engineering perspectives, including mathematical techniques for modeling, advanced algorithms for image reconstruction, and novel system designs for computational imaging in various spectral regimes, such as X-ray, optical, terahertz, and microwave regimes. Contributions are also welcome concerning applications using computational imaging, from fundamental science to applied research.

Potential topics include, but are not limited to:

- ▶ Mathematical techniques and theories for system modeling
- ▶ Algorithms for data inversion and imaging reconstruction
- ▶ Image recovery from sparse data using compressed sensing
- ▶ Methods and algorithms for signal/image processing and extraction
- ▶ Methods and systems for nonconventional sensing and imaging, including integral imaging, dynamic and multidimensional imaging, coded-aperture imaging, synthesized-aperture imaging, computed tomography, and other computational imaging modalities
- ▶ Applications, including biomedical imaging, natural and environmental research, and material characterization

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/mpe/acis/>.

Lead Guest Editor

Jinyang Liang, Washington University
in St. Louis, St. Louis, USA
jinyang.liang@email.wustl.edu

Guest Editors

Liang Gao, University of Illinois at
Urbana-Champaign,
Urbana-Champaign, USA
gaol@illinois.edu

Ziran Wu, SLAC National Accelerator
Laboratory, Menlo Park, USA
ziranwu1982@gmail.com

Mohammadreza Nasirivanaki, Wayne
State University, Detroit, USA
mrn.avanaki@wayne.edu

Manuscript Due

Friday, 5 August 2016

First Round of Reviews

Friday, 28 October 2016

Publication Date

Friday, 23 December 2016