Call for Papers
IEEE Signal Processing Magazine
Special Issue on *Signal Processing for Art Investigation*

Technical art history constitutes a relatively new sub-discipline of growing significance within art history that aims to apply scientific principles to the investigation of artistic questions. The improvement in recent decades of various imaging techniques (e.g. x-ray fluorescence, infrared, high resolution, multi-spectral, micro- and macro-raking light) together with the advent of high-speed processors, computers and large storage facilities have been crucial to the advancement of conservation science and technical art history. The data made available from these technical advances opens a door for Signal and Image Processing work aimed at assisting art experts in addressing challenging and fundamental questions such as authorship, dating, characterization of materials, characterization of artistic style, and investigations in the change over time of the physical objects.

Art history and the quantitative sciences remain largely separate communities, despite recent and significant efforts from both sides. There is a growing interest in art historical topics for Signal and Image Processing. Conversely, the arts can prove useful to Signal Processing posing challenging issues whose outcome may transfer to other applications.

In this context, the goal of this Special Issue is to contribute to bridging gaps between art history, conservation, connoisseurship, and Signal and Image Processing communities, to gather significant contributions from interdisciplinary teams that span both fields and promote greater visibility of this new, challenging, and promising subject, as well as to promote new and original future interactions.

Contributions from interdisciplinary teams that include both art experts and signal processing researchers are strongly encouraged and will be preferred.

Submission Procedure:
White papers, limited to four double-space pages, should summarize the motivation, the significance of the topic, a brief summary, an outline of the content, and key references. Prospective authors should submit white papers in pdf format at: `http://mc.manuscriptcentral.com/spmag-ieee`.

Schedule:

White paper due	Jul. 11, 2014	Revised manuscript due	Feb. 6, 2014
Invitation notification	Aug. 8, 2014	Final notification	Feb. 20, 2015
Manuscript due	Nov. 24, 2014	Final manuscript due	Mar. 6, 2015
Acceptance/rejection notification	Jan. 16, 2014	Publication	July, 2015

Relevant topics include (but are not limited to) signal processing for the automation of:
Canvas thread counting, Canvas roll-mate identification, Brushwork characterization, Painter identification and style characterization via brushwork, Period and style quantification and classification, Separation of artist's marks from material properties, Aids for dating and attribution of art objects, Forgery detection, Methods for quantifying color usage by artist, subject, school, or period, Huge database searching for art objects with matching features, Texture characterization, classification, Laid paper mold-mate identification, Multispectral image registration; Multispectral non invasive materials analysis, Dendrochronological tree-ring marking for wood panel supports, Painting surface craquelure detection and simulated in-painting, aging, Paper watermark matching, Non-invasive under-drawing reconstruction, Simulated color correction to counteract aging and degradation, 3-D rendering from multiple 2-D images, Reconstruction of shattered murals, ceramics, and statues.

Guest Editors:
Patrice Abry, CNRS, ENS Lyon, France, `patrice.abry@ens-lyon.fr`
Andrew G. Klein, Worcester Polytechnic Institute, USA, `klein@ece.wpi.edu`
William Sethares, University of Wisconsin, USA, `sethares@gmail.com`
C. Richard Johnson, Jr., Cornell University, USA, `johnson@ece.cornell.edu`

More information at `http://perso.ens-lyon.fr/patrice.abry/`
- A LaTeX White Paper template is available, its use is not mandatory.
- Please note that *Invitation* does not imply *acceptance* : Submissions will go through the regular IEEE review process.