

Call for papers
Special issue of *Signal Processing*
Processing and Analysis of High-Dimensional Masses of Image and Signal Data

The coming century will be that of the data and data mining is already considered as one of the most challenging ongoing research fields. Our information society continuously invests massively in the collection, the processing and the analysis of data of all kinds on enormous scales. One typical case is image, video and signal data that are one of the major sources that feed our society in torrential streams.

High-dimensional masses of image, video and signal data can be of two types: a high number of data instances or a high number of features describing each instance. Anyway, this high-dimensionality is a brake for the extraction of knowledge from such data. Indeed, classical methods are not designed to cope with this kind of explosive growth of dimensionality and their performances collapse when dimensionality gets high. For the case of images, video and signal data, one needs efficient tools to denoise, process, analyze, reduce, categorize, classify and visualize such high-dimensional masses of data.

This issue aims to present the latest developments in this area both from theoretical and application perspective to capture the widest possible range of problems in the processing and the analysis of high dimensional masses of image, video and signal data. To this end, we solicit submissions in the following areas, among others focused on image, video and signal data:

- Dimensionality reduction,
- Graph-based methods,
- Supervised, unsupervised and semi-supervised learning,
- Manifold learning,
- Clustering, categorization,
- Data denoising, regularization and diffusion,
- Applications

The provisional calendar for the issue is:

- Deadline for submission: October, 31st 2008
- First Round of Reviews/Decisions: January, 31st 2009
- Resubmission of Revised Papers (if needed): April, 30th 2009
- Final Decisions to the authors: June, 30th 2009
- Issue Publication (scheduled): fall/winter 2009

Guest editors:

- *Christophe Charrier*, received his PhD from the university of Saint-Etienne in 1998 in the field of Computer Engineering and Image Processing. From 1998 to 2001, he was a postdoctoral researcher at the LRTS, Laval University, Quebec City, with Pr. Gilles Y. Delisle. In 2001, he joined the Communication Networks and Services department of technology of the Université de Caen Basse Normandie as an associate professor. His research concerns color image compression, human vision, color image quality, data fusion and data classification.
- *Olivier Lezoray*, received the Ph.D. degree in computer Science from the University of Caen in 2000. He joined the Communication Networks and Services department of technology of the Université de Caen Basse Normandie as an associate professor. His research focuses on image segmentation techniques for color images and data classification methods based on the cooperation of machine learning methods.
- *Abderrahim Elmoataz* is a full professor in computer science at the Computer Science Department of the University of Caen. He is the head of the Vision and Image Analysis team of the LUSAC research laboratory. His research focuses on PDE methods for images restoration and segmentation.
- *Robert Bergevin* is a Professor in the Department of Electrical and Computer Engineering at Laval University and a registered Professional Engineer. His research interests are in image and video analysis and cognitive computer vision. He serves as Associate Editor for the Pattern Recognition journal and Area Editor for the Computer Vision and Image Understanding journal.

- *Fathallah Nouboud* is a full professor in computer science at the Computer Science Department of the Université du Québec à Trois Rivières.
- *Louis Wehenkel* graduated as an Electrical Engineer (in electronics) in 1986 and received his Ph.D. and the Agrégation de l'Enseignement Supérieur from the University of Liege, in 1990 and 1994, respectively. Currently, he is Professor in the Department of Electrical Engineering and Computer Science at the University of Liège. His research interests include stochastic methods, in particular optimization, automatic learning and datamining, and their application in power systems and in bioinformatics.