



## **Optimization for Vision, Graphics and Medical Imaging**

**A Special Track of the  
8th International Symposium on Visual Computing (ISVC'12)**

**<http://www.isvc.net>**

**July 16-18, 2012, Crete, Greece**

### **Scope:**

A wide array of problems in Visual Computing can be naturally formulated as optimization tasks. In this context, one wants to optimize an objective function that measures how well a set of hidden parameters fits to the observed visual data. The popularity of these approaches stems from the fact that most processes related to Visual Computing are typically characterized by a lack of closed form solutions, and uncertainties (due to noise, imperfect sensors, ambiguities in the visual interpretation etc.). As a result perfect or exact solutions hardly exist, whereas inexact but optimal (in an application-specific sense) solutions and their efficient computation is what one aims at.

Computer vision, computer graphics and medical imaging are three areas of Visual Computing for which the optimization paradigm has gained a significant interest within the last years, largely due to the development of highly efficient and sophisticated optimization techniques, which are capable of handling large scale problems with complex objective functions. In this special track we are soliciting papers from all the above mentioned fields that present new theoretical contributions as well as interesting applications of optimization methods.

### **Topics:**

The topics of interest include but are not limited to the following areas:

- Image and video modeling
- Image segmentation
- Motion estimation and tracking
- Texture synthesis
- Image/video completion
- Optical flow
- Discrete or continuous optimization approaches
- Variational methods
- Markov Random Fields (inference, learning and MAP estimation)
- Graph-cuts, linear programming, message-passing methods
- PDEs
- Level set methods
- Comparison of performance

- Computational complexity
- Markov Chain Monte Carlo techniques

### **Paper Submission Procedure:**

Papers submitted to ISVC 2012 Special Track must not have been previously published and must not be currently under consideration for publication elsewhere. Manuscripts should be submitted in camera-ready format and should not exceed **12 pages**, including figures and tables (see <http://www.isvc.net> for details). All papers accepted will appear in the symposium proceedings which will be published by **Springer-Verlag** in the **Lecture Notes in Computer Science (LNCS)** series.



### **Important Dates:**

<b>Paper submissions</b>	May 7, 2012 (Extended)
<b>Notification of acceptance</b>	June 4, 2012
<b>Final camera ready paper</b>	June 18, 2012
<b>Advance Registration</b>	June 18, 2012
<b>ISVC'12 Symposium</b>	July 16-18, 2012

### **Organizers:**

**Nikos Komodakis**, University of Crete, Greece, [komod@csd.uoc.gr](mailto:komod@csd.uoc.gr)  
**Kohli Pushmeet**, Microsoft Research Cambridge, UK, [pkohli@microsoft.com](mailto:pkohli@microsoft.com)  
**Kumar Pawan**, Ecole Centrale de Paris, France, [pawan.kumar@ecp.fr](mailto:pawan.kumar@ecp.fr)  
**Maeder Anthony**, University of Western Sydney, Australia, [A.Maeder@uws.edu.au](mailto:A.Maeder@uws.edu.au)  
**Carsten Rother**, Microsoft Research Cambridge, UK, [carrot@microsoft.com](mailto:carrot@microsoft.com)