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Energy Minimization Methods in Computer Vision and Pattern Recognition

8th International Conference, EMMCVPR 2011
St. Petersburg, Russia, July 25-27, 2011
Proceedings

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Preface

Over the last few decades, energy minimization methods have become an established paradigm to resolve a variety of challenges in the fields of computer vision and pattern recognition. While traditional approaches to computer vision were often based on a heuristic sequence of processing steps and merely allowed a very limited theoretical understanding of the respective methods, most state-of-the-art methods are nowadays based on the concept of computing solutions to a given problem by minimizing the respective energies.

This volume contains the papers presented at the 8th International Conference on Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR 2011), held at the Radisson Royal Hotel in Saint Petersburg, July 25–27, 2011. These papers demonstrate that energy minimization methods have become a mature field of research spanning a broad range of areas from discrete graph theoretic approaches and Markov random fields to variational methods and partial differential equations. Application areas include image segmentation and tracking, shape optimization and registration, inpainting and image denoising, color and texture modeling, statistics and learning. Overall, we received 52 high-quality submissions. Based on the reviewer recommendations, after double-blind review process 30 papers were selected for publication, 16 as oral and 14 as poster presentations.

Both oral and poster papers were attributed the same number of pages in the conference proceedings. Furthermore, we were delighted that three leading experts from the fields of computer vision and energy minimization, namely, Andrew Blake (Microsoft Research), Emmanuel Candes (Stanford University), Alan Yuille (UCLA), and Vladimir Kolmogorov (IST Austria), agreed to further enrich the conference with inspiring keynote lectures.

We would like to express our gratitude to those who made this event possible and contributed to its success. In particular, our Program Committee of top international experts in the field provided excellent reviews. A major donation from Microsoft Research and a financial contribution from Yandex covered a significant part of the conference expenses. We are grateful to Andrew Delong, Lena Gorelick, and a grant from the University of Western Ontario for covering the conference's printing needs. Anna Medvedeva provided very helpful local administrative support. It is our belief that this conference will help to advance the field of energy minimization methods and to further establish the mathematical foundations of computer vision.

July 2011

Yuri Boykov
Fredrik Kahl
Victor Lempitsky
Frank R. Schmidt

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