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Pattern Recognition

31st DAGM Symposium
Jena, Germany, September 9-11, 2009
Proceedings

Springer

Volume Editors

Joachim Denzler
Herbert Süße
Friedrich-Schiller Universität Jena, Lehrstuhl Digitale Bildverarbeitung
Ernst-Abbe-Platz 2, 07743 Jena, Germany
E-mail: {joachim.denzler, herbert.suesse}@uni-jena.de

Gunther Notni
Fraunhofer-Institut für Angewandte Optik und Feinmechanik
Albert-Einstein-Str. 7, 07745 Jena, Germany
E-mail: gunther.notni@iof.fraunhofer.de

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Preface

In 2009, for the second time in a row, Jena hosted an extraordinary event. In 2008, Jena celebrated the 450th birthday of the Friedrich Schiller University of Jena with the motto "Lichtgedanken" – "flashes of brilliance." This year, for almost one week, Jena became the center for the pattern recognition research community of the German-speaking countries in Europe by hosting the 31st Annual Symposium of the Deutsche Arbeitsgemeinschaft für Mustererkennung (DAGM).

Jena is a special place for this event for several reasons. Firstly, it is the first time that the university of Jena has been selected to host this conference, and it is an opportunity to present the city of Jena as offering a fascinating combination of historic sites, an intellectual past, a delightful countryside, and innovative, international research and industry within Thuringia. Second, the conference takes place in an environment that has been heavily influenced by optics research and industry for more than 150 years. Third, in several schools and departments at the University of Jena, research institutions and companies in the fields of pattern recognition, 3D computer vision, and machine learning play an important role. The university's involvement includes such diverse activities as industrial inspection, medical image processing and analysis, remote sensing, biomedical analysis, and cutting-edge developments in the field of physics, such as the recent development of the new terahertz imaging technique. Thus, DAGM 2009 was an important event to transfer basic research results to different applications in such areas. Finally, the fact that the conference was jointly organized by the Chair for Computer Vision of the Friedrich Schiller University of Jena and the Fraunhofer Institute IOF reflects the strong cooperation between these two institutions during the past and, more generally, between research, applied research, and industry in this field. The establishment of a Graduate School of Computer Vision and Image Interpretation, which is a joint facility of the Technical University of Ilmenau and the Friedrich Schiller University of Jena, is a recent achievement that will focus and strengthen the computer vision and pattern recognition activities in Thuringia.

The technical program covered all aspects of pattern recognition and consisted of oral presentations and poster contributions, which were treated equally and given the same number of pages in the proceedings. Each section is devoted to one specific topic and contains all oral and poster papers for this topic sorted alphabetically by first authors. A very strict paper selection process was used, resulting in an acceptance rate of less than 45%. Therefore, the proceedings meet the strict requirements for publication in the Springer *Lecture Notes in Computer Science* series. Although not reflected in these proceedings, one additional point that also made this year's DAGM special is the Young Researchers' Forum, a special session for promoting scientific interactions between excellent

young researchers. The impressive scientific program of the conference is due to the enormous efforts of the reviewers of the Program Committee. We thank all of those whose dedication and timely reporting helped to ensure that the highly selective reviewing process was completed on schedule.

We are also proud to have had three renowned invited speakers at the conference:

- Josef Kittler (University of Surrey, UK)
- Reinhard Klette (University of Auckland, New Zealand)
- Kyros Kutulakos (University of Toronto, Canada)

We extend our sincere thanks to everyone involved in the organization of this event, especially the members of the Chair for Computer Vision and the Fraunhofer Institute IOF. In particular, we are indebted to Erik Rodner for organizing everything related to the conference proceedings, to Wolfgang Ortmann for installation and support in the context of the Web presentation and the reviewing and submission system, to Kathrin Mäusezahl for managing the conference office and arranging the conference dinner, and to Marcel Brückner, Michael Kemmler, and Marco Körner for the local organization.

Finally, we would like to thank our sponsors, OLYMPUS Europe Foundation Science for Life, STIFT Thuringia, MVTec Software GmbH, Telekom Laboratories, Allied Vision Technologies, Desko GmbH, Jenoptik AG, and Optonet e.V. for their donations and helpful support, which contributed to several awards at the conference and made reasonable registration fees possible. We especially appreciate support from industry because it indicates faithfulness to our community and recognizes the importance of pattern recognition and related areas to business and industry.

We were happy to host the 31st Annual Symposium of DAGM in Jena and look forward to DAGM 2010 in Darmstadt.

September 2009

Joachim Denzler
Gunther Notni
Herbert Süße

Organization

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Prizes 2007

Olympus Prize

The Olympus Prize 2007 was awarded to

Bodo Rosenhahn and Gunnar Rätsch

for their outstanding contributions to the area of computer vision and machine learning.

DAGM Prizes

The main prize for 2007 was awarded to:

Jürgen Gall, Bodo Rosenhahn, Hans-Peter Seidel: Clustered Stochastic Optimization for Object Recognition and Pose Estimation
Christopher Zach, Thomas Pock, Horst Bischof: A Duality-Based Approach for Realtime TV-L^1 Optical Flow

Further DAGM prizes for 2007 were awarded to:

Kevin Köser, Bogumil Bartczak, Reinhard Koch: An Analysis-by-Synthesis Camera Tracking Approach Based on Free-Form Surfaces
Volker Roth, Bernd Fischer: The *kernelHMM*: Learning Kernel Combinations in Structured Output Domains

Prizes 2008

Olympus Prize

The Olympus Prize 2008 was awarded to

Bastian Leibe

for his outstanding contributions to the area of closely coupled object categorization, segmentation, and tracking.

DAGM Prizes

The main prize for 2008 was awarded to:

Christoph H. Lampert, Matthew B. Blaschko: A Multiple Kernel Learning Approach to Joint Multi-class Object Detection

Further DAGM prizes for 2008 were awarded to:

Björn Andres, Ullrich Köthe, Moritz Helmstädter, Winfried Denk, Fred A. Hamprecht: Segmentation of SBFSEM Volume Data of Neural Tissue by Hierarchical Classification

Kersten Petersen, Janis Fehr, Hans Burkhardt: Fast Generalized Belief Propagation for MAP Estimation on 2D and 3D Grid-Like Markov Random Fields

Kai Krajsek, Rudolf Mester, Hanno Scharr: Statistically Optimal Averaging for Image Restoration and Optical Flow Estimation

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