Lecture Notes in Computer Science 2626

Edited by G. Goos, J. Hartmanis, and J. van Leeuwen

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Computer Vision Systems

Third International Conference, ICVS 2003
Graz, Austria, April 1-3, 2003
Proceedings

Springer

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Cataloging-in-Publication Data applied for
A catalog record for this book is available from the Library of Congress.

Bibliographic information published by Die Deutsche Bibliothek.
Die Deutsche Bibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data is available in the Internet at <http://dnb.ddb.de>.

CR Subject Classification (1998): I.4, I.2.9-10, I.5.4-5, I.3.1-2, D.2

ISSN 0302-9743
ISBN 3-540-00921-3 Springer-Verlag Berlin Heidelberg New York

Springer-Verlag Berlin Heidelberg New York
a member of BertelsmannSpringer Science+Business Media GmbH

http://www.springer.de

Printed in Germany

Typesetting: Camera-ready by author, data conversion by PTP-Berlin GmbH
Printed on acid-free paper SPIN: 10873023 06/3142 5 4 3 2 1 0

Preface

Over the past decade, great progress has been made in the geometrical foundations of computer vision. This progress has provided a solid mathematical foundation for the use of images to reconstruct and model the environment. The next step is to advance computer vision from a science of machines that reconstruct to a science of machines that see. Such a theory will require the emergence and recognition of verifiable theories and methods for performance evaluation, systems architectures, learning and control of perception.

The goal of the International Conference on Vision Systems is to document the emergence of an engineering science of Computer Vision. The first ICVS was organized in January 1999 in Las Palmas in the Canary Islands (Spain). ICVS'99 provided a forum for early work in systems architecture and performance evaluation. ICVS 2001 was organized as a two-day workshop associated with the International Conference on Computer Vision held in Vancouver in July 2001. ICVS 2001 helped complete ICCV 2001 by providing a forum for recent progress in computer vision system architectures and performance evaluation.

The ICVS 2003 was organized in April 2003 in the city of Graz, Austria. Graz was declared the "Cultural Capital of Europe" for 2003. The participants of ICVS 2003 were invited to breathe in the charming atmosphere in the alleys of the Old City.

The special theme for the third ICVS was methods for "Cognitive Vision Systems." Cognitive Computer Vision is concerned with integration and control of vision systems using explicit models of context, situation and goal-directed behavior. Cognitive vision implies functionalities for knowledge representation, learning, reasoning about events and about structures, recognition and categorization, and goal specification.

ICVS 2003 solicited original unpublished high-quality scientific papers on the design, control and evaluation of vision systems and on theories and methods of cognitive vision. The conference organizers were particularly interested in papers providing methods for the following problems:

- Architectural models for computer vision systems.
- Design methods for vision systems.
- Cognitive models for interpretation, integration and control.
- Methods and metrics for performance evaluation.

The program committee was composed of 70 internationally recognized researchers. A total of 109 unique papers were submitted for evaluation by the program committee. Program committee members were asked to evaluate papers based on pertinence, scientific quality, impact, generality and innovation. We wish to thank all of the reviewers for their serious and insightful reviews. The quality of their comments greatly aided the paper selection process. From these reviews we were able to compose a high-quality single-track program including 22 podium presentations and 29 posters.

We especially wish to thank the authors for the many serious and high-quality papers that were submitted. We received many excellent papers. Selection of the program was based on the dual criteria of scientific excellence and relevance to the conference topic. Many excellent papers were not selected for presentation because they did not fit in with the themes of the conference. We encourage the publication of these papers in other scientific forums.

The third ICVS was made possible by the support and participation of the European Network of Excellence on Cognitive Vision Systems (ECVision). We wish to thank David Vernon (Coordinator of ECVision), and Colette Maloney of the European Commission's IST Program on Cognitive Vision for their financial and moral support. We also wish to thank Daniela Hall, the conference webmaster, for doing the difficult task of assembling these proceedings.

We hope that you enjoy and profit from the scientific papers published in this volume.

January 2003

James L. Crowley, Justus H. Piater,
Markus Vincze, Lucas Paletta

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