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ICVS 2003 solicited original unpublished high-quality scientific papers on the design, control and evaluation of vision systems and on theories and methods of cognitive vision.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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<table>
<thead>
<tr>
<th>Program Committee VII</th>
</tr>
</thead>
<tbody>
<tr>
<td>Katsushi Ikeuchi</td>
</tr>
<tr>
<td>Hiroshi Ishiguro</td>
</tr>
<tr>
<td>Laurent Itti</td>
</tr>
<tr>
<td>Josef Kittler</td>
</tr>
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</tr>
<tr>
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</tr>
<tr>
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</tr>
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</tr>
<tr>
<td>Ales Leonardis</td>
</tr>
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<td>David Lowe</td>
</tr>
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</tr>
<tr>
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</tr>
</tbody>
</table>

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# Table of Contents

## I Cognitive Vision

Implementing the Expert Object Recognition Pathway .................. 1  
*Bruce A. Draper, Kyungim Baek, Jeff Boody*

Efficient Pose Estimation Using View-Based Object Representations .... 12  
*Gabriele Peters*

Integrating Context-Free and Context-Dependent Attentional Mechanisms for Gestural Object Reference .......................... 22  
*Gunther Heidemann, Robert Rae, Holger Bekel, Ingo Bax, Helge Ritter*

## II Philosophical Issues in Cognitive Vision

Reflections on Cognitive Vision Systems ................................. 34  
*Hans-Hellmut Nagel*

Towards Ontology Based Cognitive Vision ................................. 44  
*Nicolas Maillot, Monique Thonnat, Alain Boucher*

A Self-Referential Perceptual Inference Framework for Video Interpretation ........................................ 54  
*Christopher Town, David Sinclair*

## III Cognitive Vision and Applications

Recurrent Bayesian Network for the Recognition of Human Behaviors from Video ........................................ 68  
*Nicolas Moënne-Loccoz, François Brémond, Monique Thonnat*

*Tae-Seung Lee, Eung-Min Lee, Hyeong-Taek Park, Young-Kil Kwag, Sang-Seok Lim, Joong-Hwan Baek, Byong-Won Hwang*

Efficient Fingertip Tracking and Mouse Pointer Control for a Human Mouse ........................................ 88  
*Jiyoung Park, Juneho Yi*

Real-Time Camera Pose in a Room ........................................ 98  
*Manmohan Krishna Chandraker, Christoph Stock, Axel Pinz*
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognition of Obstacles on Structured 3D Background</td>
<td>111</td>
</tr>
<tr>
<td>Reinhold Huber, Jürgen Biber, Christoph Nowak, Bernhard Spatzek</td>
<td></td>
</tr>
<tr>
<td>Virtual Post-its: Visual Label Extraction, Attachment, and Tracking for Teleconferencing</td>
<td>121</td>
</tr>
<tr>
<td>Indra Geys, Luc Van Gool</td>
<td></td>
</tr>
<tr>
<td>Architecture for Image Labelling in Real Conditions</td>
<td>131</td>
</tr>
<tr>
<td>Juan Manuel García Chamizo, Andrés Fuster Guilló, Jorge Azorín López, Francisco Maciá Pérez</td>
<td></td>
</tr>
<tr>
<td>Alignment of Sewerage Inspection Videos for Their Easier Indexing</td>
<td>141</td>
</tr>
<tr>
<td>Karel Hanton, Vladimír Šmutný, Vojtěch Franc, Václav Hlaváč</td>
<td></td>
</tr>
<tr>
<td>Information Selection and Probabilistic 2D – 3D Integration in Mobile Mapping</td>
<td>151</td>
</tr>
<tr>
<td>Lucas Paletta, Gerhard Paar</td>
<td></td>
</tr>
<tr>
<td>Tree Supported Road Extraction from Arial Images Using Global and Local Context Knowledge</td>
<td>162</td>
</tr>
<tr>
<td>Matthias Butenuth, Bernd-Michael Straub, Christian Heipke, Felicitas Willrich</td>
<td></td>
</tr>
<tr>
<td>Automatic Bridge Detection in High-Resolution Satellite Images</td>
<td>172</td>
</tr>
<tr>
<td>Roger Trias-Sanz, Nicolas Loménie</td>
<td></td>
</tr>
<tr>
<td>Computer Platform for Transformation of Visual Information into Sound Sensations for Vision Impaired Persons</td>
<td>182</td>
</tr>
<tr>
<td>Bogusław Cyganek, Jan Borgosz</td>
<td></td>
</tr>
<tr>
<td>A Real-Time Multisensory Image Segmentation Algorithm with an Application to Visual and X-Ray Inspection</td>
<td>192</td>
</tr>
<tr>
<td>Yuhua Ding, George J. Vachtsevanos, Anthony J. Yezzi, Wayne Daley, Bonnie S. Heck-Ferri</td>
<td></td>
</tr>
<tr>
<td>An Attentive, Multi-modal Laser “Eye”</td>
<td>202</td>
</tr>
<tr>
<td>Simone Frintrop, Erich Rome, Andreas Nüchter, Hartmut Surmann</td>
<td></td>
</tr>
<tr>
<td>Navigating through Logic-Based Scene Models for High-Level Scene Interpretations</td>
<td>212</td>
</tr>
<tr>
<td>Bernd Neumann, Thomas Weiss</td>
<td></td>
</tr>
</tbody>
</table>

### IV Computer Vision Architectures

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Real-World Vision System: Mechanism, Control, and Vision Processing</td>
<td>223</td>
</tr>
<tr>
<td>Andrew Dankers, Alexander Zelinsky</td>
<td></td>
</tr>
</tbody>
</table>
# Table of Contents

## Learning Optimal Parameters for Self-Diagnosis in a System for Automatic Exterior Orientation

Wolfgang Förstner, Thomas Läbe

---

236

## Multi-agent Activity Recognition Using Observation Decomposed Hidden Markov Model

Xiaohui Liu, Chin-Seng Chua

---

247

## VICs: A Modular Vision-Based HCI Framework

Guangqi Ye, Jason Corso, Darius Burschka, Gregory D. Hager

---

257

## A Miniature Stereo Vision Machine for Real-Time Dense Depth Mapping

Yunde Jia, Yihua Xu, Wanchun Liu, Cong Yang, Yuwen Zhu, Xiaoxun Zhang, Luping An

---

268

## Performance Evaluation

Performance Evaluation Metrics and Statistics for Positional Tracker Evaluation

Chris J. Needham, Roger D. Boyle

---

278

## On the Application of the Concept of Dependability for Design and Analysis of Vision Systems

Christof Eberst, Thomas Herbig

---

290

## The CSU Face Identification Evaluation System: Its Purpose, Features, and Structure

David S. Bolme, J. Ross Beveridge, Marcio Teixeira, Bruce A. Draper

---

304

## Implementation Methods

The Imalab Method for Vision Systems

Augustin Lux

---

314

Dynamically Reconfigurable Vision-Based User Interfaces

Rick Kjeldsen, Anthony Levas, Claudio Pinhanez

---

323

From a CORBA-Based Software Framework to a Component-Based System Architecture for Controlling a Mobile Robot

Stefan A. Blum

---

333
VII Architecture and Classical Computer Vision

A Framework for Visual Servoing ................................. 345
  Danica Kragic, Henrik I. Christensen

Automatic Mapping of Settlement Areas Using a Knowledge-Based
Image Interpretation System ....................................... 355
  Bernd-Michael Straub, Markus Gerke, Martin Pahl

A Software Architecture for Distributed Visual Tracking in a
Global Vision Localization System ................................ 365
  Siniša Šegvić, Slobodan Ribarić

Multi-object Tracking Based on a Modular Knowledge Hierarchy ...... 376
  Martin Spengler, Bernt Schiele

Monkeys — A Software Architecture for ViRoom — Low-Cost
Multicamera System .................................................. 386
  Petr Doubek, Tomáš Svoboda, Luc Van Gool

Hierarchical Bayesian Network for Handwritten Digit Recognition ...... 396
  JaeMo Sung, Sung-Yang Bang

A Spectral Approach to Learning Structural Variations in Graphs ...... 407
  Bin Luo, Richard C. Wilson, Edwin R. Hancock

Sigmoidal Weighted Vector Directional Filter ........................... 418
  Rastislav Lukac, Bogdan Smolka, Konstantinos N. Plataniotis,
  Anastasios N. Venetsanopoulos

Real-Time Extraction of Colored Segments for
Robot Visual Navigation ................................................ 428
  Pedro E. López-de-Teruel, Alberto Ruiz, Gines García-Mateos,
  Jose M. García

A Multiple Classifier System Approach to Affine Invariant
Object Recognition ..................................................... 438
  Alireza R. Ahmadyfard, Josef Kittler

Measuring Scene Complexity to Adapt Feature Selection of
Model-Based Object Tracking .......................................... 448
  Minu Ayromlou, Michael Zillich, Wolfgang Ponweiser, Markus Vincze

A Framework for Robust and Incremental Self-Localization of a
Mobile Robot ............................................................. 460
  Matjaž Jogan, Matej Artač, Danijel Skočaj, Aleš Leonardis
## Table of Contents

### Discriminant Isometric Mapping for Face Recognition

*Ming-Hsuan Yang*  
470

### Extracting Salient Image Features for Reliable Matching Using Outlier Detection Techniques

*Dimitri Lisin, Edward Riseman, Allen Hanson*  
481

---

### VIII Video Annotation

### Brand Identification Using Gaussian Derivative Histograms

*Fabien Pelisson, Daniela Hall, Olivier Riff, James L. Crowley*  
492

### Context Based Object Detection from Video

*Lucas Paletta, Christian Greindl*  
502

### A Multimedia System Architecture for Automatic Annotation of Sports Videos

*William Christmas, Edward Jaser, Kieron Messer, Josef Kittler*  
513

### Automatic Video Interpretation: A Recognition Algorithm for Temporal Scenarios Based on Pre-compiled Scenario Models

*Van-Thinh Vu, François Brémond, Monique Thonnat*  
523

### Trajectory Based Assessment of Coordinated Human Activity

*Marko Jug, Janez Perš, Branko Dežman, Stanislav Kovačič*  
534

---

### Author Index

545