

Editorial

Jacques Blanc-Talon

*DGA/DCE/CTA, 94114 Arcueil Cedex, France
Email: jacques.blanc-talou@dga.defense.gouv.fr*

Wilfried Philips

*Department of Telecommunications and Information Processing, Ghent University, B-9000 Ghent, Belgium
Email: philips@telin.ugent.be*

As Guest Editors of this special issue, and also as members of the steering committee of the ACIVS (Advanced Concepts for Intelligent Vision Systems) series of conferences, we are pleased to introduce some of the important topics covered in this special issue.

This special issue is the result of an open Call for Papers issued at the end of the successful ACIVS 2003. As a response to this call, more than 120 papers were submitted, about a half originating from authors of papers presented at ACIVS. After a long reviewing phase, 41 contributions were selected for publication based on the reviewers' recommendations. Given the large number of submitted and accepted papers, we were led to splitting the special issue into two parts.

Over the years, ACIVS has developed into a series of very fertile international conferences focusing on the "how-to" for making intelligent vision systems. While mere theoretical papers are welcomed, most of the contributions are devoted to new techniques that intervene at different stages of a vision system, and are almost ready to be implemented. The term "vision systems" covers a wide range of systems to extract higher-level information from images and video, and the final application can relate to medical imaging, remote sensing, surveillance, and so forth. Building intelligent vision systems requires expertise from various research areas, and this is reflected by the fact that techniques from the whole image processing chain can be found in the papers included in the special issue: sensor exploitation, image enhancement, image processing, interpretation, control, and performance evaluation.

Keeping in mind that papers must deal with realistic circumstances, the input images and videos are typically acquired under nonideal circumstances. This induces the necessity of all sorts of preprocessing (noise suppression, contrast enhancement, etc.). In many cases, vision systems can

interact with and/or navigate through their environment, hence, the research interest in path-planning algorithms and scene recognition. Image retrieval is also an interesting general problem since it requires knowing which features of the database images are important and how well such features match the user's needs; new techniques have to be introduced so as to cope with the new search paradigm.

As we mentioned above, some papers in this special issue are devoted to the important application fields of remote sensing and medical imaging. The reader may notice that many of the papers in this special issue deal with pattern recognition, which has traditionally been an important research area in computer vision. The problems being dealt with are quite diverse and often tuned to specific applications, such as recognizing or tracking human beings or human body parts, tracking vehicles, or making sense of documents.

We would like to thank all the authors for contributing papers to this special issue. Given the unexpectedly large number of submitted papers, the review process has taken a considerable time, and so we would like to thank the authors for their patience as well. We also acknowledge the contribution of the many reviewers (more than 300) who helped us to ensure the quality of this issue, not only by judging papers but also by providing valuable suggestions for improvement. Last but not least, we would like to thank the Editor-in-Chief, Professor Marc Moonen, for having managed a quick publication of this issue after the end of the review process.

And, of course, we would be pleased to welcome you at a future ACIVS conference.

*Jacques Blanc-Talon
Wilfried Philips*

Jacques Blanc-Talon was born in France and received the Ph.D. degree in electrical engineering from the University of Paris XI, Orsay, in 1991. From 1991 to the end of 1992, he was a postdoctoral researcher with the CSIRO/DIT of Canberra, Australia. Since 1998, he has been acting as the Scientific Head of the Géographie-Imagerie-Perception Département, Centre Technique d'Arcueil (CTA/GIP). He now also chairs the informatics, mathematics, automatics, and information processing domains at the MRIS (Office for Advanced Research and Innovation). His main research interests are in multispectral and hyperspectral imaging, image and video compression, and applications of fractals. He cofounded the first ACIVS conference in Baden-Baden in 1999.



Wilfried Philips was born in Aalst, Belgium, on October 19, 1966. In 1989, he received the Diploma degree in electrical engineering and in 1993 the Ph.D. degree in applied sciences, both from Ghent University, Belgium. From October 1989 until October 1997 he worked at the Department of Electronics and Information Systems, Ghent University, for the Flemish Fund for Scientific Research (FWO-Vlaanderen), first as a Research Assistant and later as a Postdoctoral Research Fellow. Since November 1997, he has been with the Department of Telecommunications and Information Processing, Ghent University, where he is currently a full-time Professor. Currently, his main research interests are in image and video restoration, low- and intermediate-level image analysis, and image half-toning. He joined the ACIVS steering committee in 2000.

