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Graphics Recognition

Recent Advances and Perspectives

5th International Workshop, GREC 2003

Barcelona, Spain, July 30-31, 2003

Revised Selected Papers



Springer

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Preface

This book contains refereed and improved papers presented at the 5th IAPR¹ International Workshop on Graphics Recognition (GREC 2003). GREC 2003 was held in the Computer Vision Center, in Barcelona (Spain) during July 30–31, 2003. The GREC workshop is the main activity of the IAPR-TC10, the Technical Committee on Graphics Recognition². Edited volumes from the previous workshops in the series are available as Lecture Notes in Computer Science: LNCS Volume 1072 (GREC 1995 at Penn State University, USA), LNCS Volume 1389 (GREC 1997 in Nancy, France), LNCS Volume 1941 (GREC 1999 in Jaipur, India), and LNCS Volume 2390 (GREC 2001 in Kingston, Canada).

Graphics recognition is a particular field in the domain of document analysis that combines pattern recognition and image processing techniques for the analysis of any kind of graphical information in documents, either from paper or electronic formats. Topics of interest for the graphics recognition community are: vectorization; symbol recognition; analysis of graphic documents with diagrammatic notation like electrical diagrams, architectural plans, engineering drawings, musical scores, maps, etc.; graphics-based information retrieval; performance evaluation in graphics recognition; and systems for graphics recognition. In addition to the classic objectives, in recent years graphics recognition has faced up to new and promising perspectives, some of them in conjunction with other, affine scientific communities. Examples of that are sketchy interfaces and on-line graphics recognition in the framework of human computer interaction, or query by graphic content for retrieval and browsing in large-format graphic documents, digital libraries and Web applications. Thus, the combination of classic challenges with new research interests gives the graphics recognition field an active scientific community, with a promising future.

Following the tradition of the previous workshops in the series, the scientific program of GREC 2003 was organized in a single-track 2-day workshop. It comprised eight sessions dedicated to specific topics. For each session, there was an overview talk, followed by a number of short presentations. Each session was concluded by a panel discussion. The workshop had 47 registered participants from 15 different countries. After the workshop, all the authors were invited to submit enhanced versions of their papers for this edited volume. The authors were encouraged to include ideas and suggestions that arose in the panel discussions of the workshop. Every paper was evaluated by three reviewers. At least one reviewer was assigned from the attendees to the workshop. As a result of the reviewers' comments, many of the papers that appear in this volume were

¹ International Association for Pattern Recognition, <http://www.iapr.org>

² <http://www.iapr-tc10.org>

thoroughly revised and improved. Hence, we feel that the scientific contents of this book have excellent quality.

This volume is organized into seven sections, reflecting the session topics in the workshop: platforms, architectures and document knowledge models; technical documents, maps and charts; perceptual organization, indexing and graphical signatures; image analysis and low-level processing; symbol recognition, graphical matching and classification; on-line processing and user interfaces; and performance evaluation and contests.

Two contests were held during GREC 2003: The *Second Arc Segmentation Contest*, organized by Liu Wenying, with two participants. And the *First Symbol Recognition Contest*, organized by Ernest Valveny and Philippe Dosch, with four participants. The contests were a big success, and the inclusion of them has become a key issue in GREC workshops. Contests are useful not only to evaluate the state-of-the-art on algorithms related to different problems of graphics recognition, but also to provide evaluation databases and ground-truth to the community. This time, all the material used in the contests was distributed in a CD among GREC 2003 delegates and can be downloaded from the TC10 Web page.

We owe special thanks to the contributing authors, the reviewers and also to the workshop chairs that stimulated active panel discussions at the end of the sessions. We also especially acknowledge the support provided by the sponsors of the workshop: the IAPR (International Association for Pattern Recognition), CVC (Computer Vision Center), UAB (Universitat Autònoma de Barcelona), AERFAI (Asociación Española de Reconocimiento de Formas y Análisis de Imágenes), DURSI (Departament d'Universitats Recerca i Societat de la Informació, Generalitat de Catalunya), MCyT (Ministerio de Ciencia y Tecnología, TIC2002-11614-E), and HP (Hewlett-Packard). Many thanks also to Javier Jiménez, Enric Martí, Oriol Ramos, Gemma Sánchez, and Ernest Valveny, who were responsible for local arrangements, and worked hard both for the organization of the workshop and during the preparation of this book.

The 6th Graphics Recognition Workshop (GREC 2005³) will be held in Hong Kong, China, in August 2005, and it will be organized by Dr. Liu Wenying.

April 2004

Josep Lladós
Young-Bin Kwon

³ <http://www.cs.cityu.edu.hk/grec2005/>

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