Preface

This volume contains papers selected for presentation at the 6th IAPR Workshop on Document Analysis Systems (DAS 2004) held during September 8–10, 2004 at the University of Florence, Italy. Several papers represent the state of the art in a broad range of "traditional" topics such as layout analysis, applications to graphics recognition, and handwritten documents. Other contributions address the description of complete working systems, which is one of the strengths of this workshop. Some papers extend the application domains to other media, like the processing of Internet documents.

The peculiarity of this 6th workshop was the large number of papers related to digital libraries and to the processing of historical documents, a taste which frequently requires the analysis of color documents. A total of 17 papers are associated with these topics, whereas two years ago (in DAS 2002) only a couple of papers dealt with these problems.

In our view there are three main reasons for this new wave in the DAS community. From the scientific point of view, several research fields reached a thorough knowledge of techniques and problems that can be effectively solved, and this expertise can now be applied to new domains. Another incentive has been provided by several research projects funded by the EC and the NSF on topics related to digital libraries. Last but not least, the organization of focused events, like the recent DIAL workshop chaired by Henry Baird and Venu Govindraju in Palo Alto (CA), had a strong impact on the definition of new research directions. However, it is indeed a lucky coincidence that this new trend in DAS research emerged in this edition organized in a town such as Florence, which keeps such an exceptional artistic and cultural heritage.

We received a total of 79 submissions from 19 countries, and we selected 31 oral presentations and 22 posters highlighted with short oral introductions. As a supplement to this proceedings, notes from the workshop discussions and other material related to presented papers will be posted on the DAS 2004 website: http://www.dsi.unifi.it/DAS04. Each paper was reviewed by three reviewers whom we would like to warmly thank here. We should mention the valuable support and hints provided by members of the Program Committee and past DAS chairs. We also wish to acknowledge the generosity of our sponsors: the International Association for Pattern Recognition, the University of Florence, the DFKI, ABBYY, Hitachi, and Siemens.

Special thanks are due to Alessio Ceroni, Cristina Dolfi, and Emanuele Marino for their invaluable contributions to the local organization.

June 2004

Simone Marinai Andreas Dengel

Organization

Workshop Co-chairs

Simone Marinai University of Florence, Italy

Andreas Dengel DFKI, Germany

Program Committee

Apostolos Antonacopoulos University of Liverpool, UK

Henry Baird Lehigh University, USA
Francesca Cesarini University of Florence, Italy
David Doermann University of Maryland, USA

Andrew Downton University of Essex, UK

Hiromichi Fujisawa Hitachi Central Research Laboratory, Japan Jianying Hu IBM T.J. Watson Research Center, USA Rolf Ingold University of Fribourg, Switzerland

Ramanujan Kashi Avava Labs Research, USA

Koichi Kise Osaka Prefecture University, Japan

Dan Lopresti Lehigh University, USA
Donato Malerba University of Bari, Italy
Udo Miletzki Siemens Dematic, Germany
Yasuaki Nakano Kyushu University, Japan

Lambert Schomaker Rijksuniversiteit Groningen, The Netherlands

Giovanni Soda University of Florence, Italy

Larry Spitz Document Recognition Technologies,

New Zealand

Karl Tombre LORIA-INPL, France Luc Vincent LizardTech, USA

Marcel Worring University of Amsterdam, The Netherlands

Additional Referees

Annalisa Appice Dimosthenis Karatzas T.R. Roth-Berghofer Margherita Berardi Michele Lapi Jane Snowdon Alain Biem Larry O'Gorman Salvatore Tabbone Thomas Breuel Huanfeng Ma Yefeng Zheng Michelangelo Ceci Gérald Masini Gary Zi

Philippe Dosch Eugene Ratzlaff Stefan Jaeger Maurizio Rigamonti