Lecture Notes in Computer Science 5158

Commenced Publication in 1973
Founding and Former Series Editors:
Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

Sargur N. Srihari Katrin Franke (Eds.)

Computational Forensics

Second International Workshop, IWCF 2008
Washington, DC, USA, August 7-8, 2008
Proceedings

Springer

Volume Editors

Sargur N. Srihari
University at Buffalo, The State University of New York
Center of Excellence for Document Analysis and Recognition (CEDAR)
UB Commons, 520 Lee Entrance, Suite 202, Amherst, NY, 14228-2583, USA
E-mail: srihari@cedar.buffalo.edu

Katrin Franke
Gjøvik University College, Norwegian Information Security Laboratory (NISlab)
Teknologivegen 22, 2802 Gjøvik, Norway
E-mail: katrin.franke@hig.no

Library of Congress Control Number: 2008932583

CR Subject Classification (1998): I.5, I.4, I.7.5, I.2.7

LNCS Sublibrary: SL 6 – Image Processing, Computer Vision, Pattern Recognition, and Graphics

ISSN 0302-9743
ISBN-10 3-540-85302-2 Springer Berlin Heidelberg New York
ISBN-13 978-3-540-85302-2 Springer Berlin Heidelberg New York

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India
Printed on acid-free paper SPIN: 12464401 06/3180 5 4 3 2 1 0

Preface

This Lecture Notes in Computer Science (LNCS) volume contains the papers presented at the Second International Workshop on Computational Forensics (IWCF 2008), held August 7–8, 2008. It was a great honor for the organizers to host this scientific event at the renowned National Academy of Sciences: Keck Center in Washington, DC, USA.

Computational Forensics is an emerging research domain focusing on the investigation of forensic problems using computational methods. Its primary goal is the discovery and advancement of forensic knowledge involving modeling, computer simulation, and computer-based analysis and recognition in studying and solving forensic problems.

The Computational Forensics workshop series is intended as a forum for researchers and practitioners in all areas of computational and forensic sciences. This forum discusses current challenges in computer-assisted forensic investigations and presents recent progress and advances.

IWCF addresses a broad spectrum of forensic disciplines that use computer tools for criminal investigation. This year's edition covers presentations on computational methods for individuality studies, computer-based 3D processing and analysis of skulls and human bodies, shoe print preprocessing and analysis, natural language analysis and information retrieval to support law enforcement, analysis and group visualization of speech recordings, scanner and print device forensics, and computer-based questioned document and signature analysis.

In total, 39 papers from 13 countries were submitted to IWCF 2008, of which 19 (48%) were accepted. We appreciated the number of papers submitted as well as the diversity of the topics covered. We regret that not all manuscripts could be accepted for publication. The review process was a delicate and challenging task for the Program Committee. All manuscripts were carefully reviewed by three experts. We are especially grateful to the 19 members of the Program Committee for their dedication, adherence to high standards, and timely delivery of the reviews.

The organization of such an event is not possible without the effort and the enthusiasm of the people involved. We thank all the members of the Local Organizing Committee. Our special thanks go to Eugenia H. Smith for coordinating the entire organization of the event.

June 2008

Sargur N. Srihari
Katrin Franke

IWCF 2008 Organization

IWCF 2008 was jointly organized by the Center of Excellence for Document Analysis and Recognition (CEDAR), University at Buffalo, State University of New York, USA and the Norwegian Information Security Laboratory (NISlab), Gjøvik University College, Norway.

Workshop Co-chairs

Sargur N. Srihari	University at Buffalo, USA
Katrin Franke	Gjøvik University College, Norway

Local Organization

Eugenia H. Smith	University at Buffalo, USA

Program Committee

Gonzalo Álvarez Marañón	Consejo Superior de Investigaciones Científicas, Spain
Faouzi Alaya Cheikh	Gjøvik University College, Norway
Oscar Cordón	European Centre for Soft Computing, Spain
Edward J. Delp	Purdue University, USA
Patrick De Smet	FOD Justitie, Belgium
Andrzej Drygajlo	Swiss Federal Institute of Technology Lausanne, Switzerland
Cinthia Freitas	Pontifical Catholic University of Parana, Brazil
Zeno Geradts	Netherlands Forensic Institute, The Netherlands
Lawrence Hornak	West Virginia University, USA
Mario Köppen	Kyushu Institute of Technology, Japan
Deborah Leben	US Secret Service, USA
Zhenan Sun	Chinese Academy of Sciences, China
Milan Milosavljević	University of Belgrade, Serbia
Slobodan Petrović	Gjøvik University College, Norway
Hiroshi Sako	Hitachi Central Research Laboratory, Japan
Reva Schwartz	US Secret Service, USA
Cor J. Veenman	University of Amsterdan, The Netherlands
Svetlana Yanushkevich	University of Calgary, Canada
André Årnes	Oracle Norge AS, Norway

Table of Contents

Linguistics

Decision Making and Search

Speech Analysis

Signatures and Handwriting