

LNCS 4261

Yueting Zhuang
Shiqiang Yang
Yong Rui
Qinming He (Eds.)

Advances in Multimedia Information Processing – PCM 2006

7th Pacific Rim Conference on Multimedia
Hangzhou, China, November 2006
Proceedings



Springer

Yueting Zhuang Shiqiang Yang
Yong Rui Qinming He (Eds.)

Advances in Multimedia Information Processing – PCM 2006

7th Pacific Rim Conference on Multimedia
Hangzhou, China, November 2-4, 2006
Proceedings



Volume Editors

Yueling Zhuang
Qinming He
Zhejiang University, College of Computer Science
Hangzhou, 310027, P.R. China
E-mail: {yzhuang, hqm}@zju.edu.cn

Shiqiang Yang
Tsinghua University, Department of Computer Science and Technology
Beijing 100084, China
E-mail: yangshq@tsinghua.edu.cn

Yong Rui
Microsoft China R&D Group, China
E-mail: yongrui@microsoft.com

Library of Congress Control Number: 2006935258

CR Subject Classification (1998): H.5.1, H.3, H.5, C.2, H.4, I.3, K.6, I.7, I.4

LNCS Sublibrary: SL 3 – Information Systems and Application, incl. Internet/Web and HCI

ISSN 0302-9743
ISBN-10 3-540-48766-2 Springer Berlin Heidelberg New York
ISBN-13 978-3-540-48766-1 Springer Berlin Heidelberg New York

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, re-use of illustrations, recitation, broadcasting, reproduction on microfilms or in any other way, and storage in data banks. Duplication of this publication or parts thereof is permitted only under the provisions of the German Copyright Law of September 9, 1965, in its current version, and permission for use must always be obtained from Springer. Violations are liable to prosecution under the German Copyright Law.

Springer is a part of Springer Science+Business Media

springer.com

© Springer-Verlag Berlin Heidelberg 2006
Printed in Germany

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India
Printed on acid-free paper SPIN: 11922162 06/3142 5 4 3 2 1 0

Commenced Publication in 1973

Founding and Former Series Editors:
Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

Editorial Board

David Hutchison

Lancaster University, UK

Takeo Kanade

Carnegie Mellon University, Pittsburgh, PA, USA

Josef Kittler

University of Surrey, Guildford, UK

Jon M. Kleinberg

Cornell University, Ithaca, NY, USA

Friedemann Mattern

ETH Zurich, Switzerland

John C. Mitchell

Stanford University, CA, USA

Moni Naor

Weizmann Institute of Science, Rehovot, Israel

Oscar Nierstrasz

University of Bern, Switzerland

C. Pandu Rangan

Indian Institute of Technology, Madras, India

Bernhard Steffen

University of Dortmund, Germany

Madhu Sudan

Massachusetts Institute of Technology, MA, USA

Demetri Terzopoulos

University of California, Los Angeles, CA, USA

Doug Tygar

University of California, Berkeley, CA, USA

Moshe Y. Vardi

Rice University, Houston, TX, USA

Gerhard Weikum

Max-Planck Institute of Computer Science, Saarbruecken, Germany

Preface

Welcome to the proceedings of the 7th Pacific-Rim Conference on Multimedia (PCM 2006) held at Zhejiang University, Hangzhou, China, November 2-4, 2006. Following the success of the previous conferences, PCM 2000 in Sydney, PCM 2001 in Beijing, PCM 2002 in Hsinchu, PCM 2003 in Singapore, PCM 2004 in Tokyo, and PCM 2005 in Jeju, PCM 2006 again brought together researchers, developers, practitioners, and educators in the field of multimedia from around the world. Both theoretical breakthroughs and practical systems were presented at the conference. There were sessions from multimedia retrieval to multimedia coding to multimedia security, covering a wide spectrum of multimedia research.

PCM 2006 featured a comprehensive program including keynote talks, regular paper presentations, and special sessions. We received 755 submissions and the number was the largest among all the PCMs. From such a large number of submissions, we accepted only 116 oral presentations. We kindly acknowledge the great support provided by the Program Committee members in the reviewing of submissions, as well as the additional reviewers who generously spent many hours. The many useful comments provided by the reviewing process are very useful to authors' current and future research.

This conference would not have been successful without the help of so many people. We greatly appreciate the support from our Organizing Committee Chairs Fei Wu, Nicu Sebe, Hao Yin, Daniel Gatica-Perez, Lifeng Sun, Alejandro Jaimes, Li Zhao, Jiangqin Wu, Shijian Luo, Jianguang Weng, Honglun Hou, Xilin Chen, Qing Li, Hari Sundaram, Rainer Lienhart, Kiyoharu Aizawa, Yo-Sung Ho, Mark Liao, Qibin Sun, Liu Jian, Yao Cheng, Zhang Xiafen, Zhang hong, Zhou xin and advisory chairs, Sun-Yuan Kung, Thomas S. Huang, and Hongjiang Zhang. Special thanks go to Fei Wu, the organization Vice Chair, who spent countless hours in preparing the conference. Last but not least, we would like to thank the sponsorship of National Natural Science Foundation of China, Insigma Technology Co.,Ltd, Microsoft Research, and Y.C. Tang Disciplinary Development Fund (Zhejiang University).

August 2006

Yunhe Pan
Yueting Zhuang
Shiqiang Yang
Yong Rui
Qimming He

Organization

PCM 2006 was organized by the College of Computer Science and Technology,
Zhejiang University.

Organization Members

Conference Chair

Yunhe Pan Zhejiang University, China

Program Co-chairs

Yueling Zhuang Zhejiang University, China
Shiqiang Yang Tsinghua University, China
Yong Rui Microsoft Research, USA

Organizing Chair

Qinming He Zhejiang University, China

Organizing Vice-Chair

Fei Wu Zhejiang University, China

Tutorial Co-chairs

Nicu Sebe University of Amsterdam, Netherlands

Special Sessions Co-chairs

Daniel Gatica-Perez IDIAP/EPFL, Switzerland
Lifeng Sun Tsinghua University, China

Poster/Exhibition Co-chairs

Alejandro Jaimes FXPAL, Japan
Li Zhao Tsinghua University, China

Financial Chair

Shijian Luo Zhejiang University, China

Registration Chair

Jianguang Weng Zhejiang University, China

Web Chair

Honglun Hou Zhejiang University, China

VIII Organization

Publicity and Liaison Chairs

Xilin Chen	Institute of Computing Technology, CAS, China
Qing Li	City University of Hong Kong, China
Hari Sundaram	Arizona State University, USA
Rainer Lienhart	University of Augsburg, Germany
Kiyoharu Aizawa	University of Tokyo, Japan
Yo-Sung Ho Gwangju	Institute of Science and Technology, Korea
Mark Liao	Academia Sinica, Taiwan, China
Qibin Sun	I2R, Singapore

Advisory Committee

Sun-Yuan Kung	Princeton University, USA
Thomas S. Huang	University of Illinois at Urbana Champaign, USA
Hongjiang Zhang	Microsoft Research Asia, China

Program Committee

Aggelos Katsaggelos (Northwestern University, USA)
Ajay Divakaran (Mitsubishi Labs, USA)
Alejandro Jaimes (FX Pal Japan, Fuji Xerox, USA)
Alan Hanjalic (Delft University of Technology, Netherlands)
Anthony T. S. Ho (University of Surrey, UK)
Asanobu Kitamoto (National Institute of Informatics, Japan)
Bernard Merialdo (Eurocom, France)
Bo Shen (HP Labs, USA)
Chabane Djeraba (LIFL, France)
Changsheng Xu (Agency for Science, Technology and Research, Singapore)
Chong-Wah Ngo (City University of Hong Kong, Hong Kong)
Chi-Man Pun (University of Macau, Macau)
Dongge Li (Motorola Labs, USA)
Dongming Lu (Zhejiang University, China)
Feng Jing (Microsoft, China)
Goh Wooi Boon (Nanyang Technological University, Singapore)
Gopal Pingali (IBM Research, USA)
Hae Kwang Kim (Sejong University, Korea)
Hae Yong Kim (University of São Paulo, Brazil)
Heather Yu (Panasonic, USA)
Hitoshi Kiya (Tokyo Metropolitan University, Japan)
Huamin Feng (Beijing Electronic Science and Technology Institute, China)
Hyeran Byun (Yonsei University, Korea)
Hyoun Joong Kim (Kwangwoon University, Korea)
Ichiro Ide (Nagoya University, Japan)
Irene H. Y. Gu (Chalmers, Sweden)
Jenq-Nenq Hwang (University of Washington, USA)
Jeong A. Lee (Chosun University, Korea)

Jianming Deng (Southeast University, China)
Jin Li (Microsoft, USA)
Jiro Katto (Waseda University, Japan)
Jiwu Huang (Sun Yat-Sen University, China)
John Smith (IBM T.J. Watson Research Center, USA)
John R. Kender (Columbia University, USA)
JongWon Kim (GIST, Korea)
Kai-Kuang Ma (Nanyang Technological University, Singapore)
Kien A. Hua (University of Central Florida, USA)
Lalitha Agnihotri (Philips Research, USA)
Lei Zhang (Microsoft Research Asia, China)
Liang-Tien Chia (Nanyang Technological University, Singapore)
Lingda Wu (National University of Defense Technology, China)
Ling Guan (Ryerson University, Canada)
Liyi Wei (Microsoft Research Asia, China)
Lizhuang Ma (Shanghai Jiao Tong University, China)
Luis Torres (Universitat Politecnica de Catalunya, Spain)
Man Bae Kim (Kangwon National University, Korea)
Marcel Worring (University of Amsterdam, Netherlands)
Masao Aizu (Canon, Japan)
Michael Lew (University of Leiden, Netherlands)
Nicu Sebe (University of Amsterdam, Netherlands)
Nozha Boujemaa (INRIA Rocquencourt, France)
Patrick Gros (IRISA-CNRS, France)
Peter Pyun (HP, USA)
Peter Schelkens (Vrije Universiteit Brussel, Belgium)
R.C. Jain (Birla Institute of Science and Technology, India)
Rainer Lienhart (University of Augsburg, Germany)
Roichi Kawada (KDDI R&D Laboratories, Japan)
Shipeng Li (Microsoft Research Asia, China)
Shin'ichi Satoh (NII, Japan)
Svetlana Venkatesh (Curtin University, Australia)
Takahiro Saito (Kanagawa University, Japan)
Timothy K. Shih (Tamkang University Taiwan, China)
Toshiaki Fujii (Nagoya University, Japan)
Tsuhan Chen (CMU, USA)
Vincent Oria (New Jersey Institute of Technology, USA)
Wanquan Liu (Curtin University of Technology, Australia)
Weisi Lin (Agency for Science, Technology and Research, Singapore)
Wenhu Qin (Southeast University, China)
William Grosky (University of Michigan, USA)
Xiao-Ping Zhang (Ryerson University, Canada)
Xiangxu Meng (Shandong University, China)
Xiangyang Xue (Fudan University, China)
Xuelong Li (University of London, UK)

Yihong Gong (NEC Laboratories America, USA)
Yi Wu (Intel, USA)
You Jip Won (Hanyang University, Korea)
Youngjun Yoo (TI, USA)
Young Shik Moon (Hanyang University, Korea)
Yuanchun Shi (Tsinghua University, China)
Yung-Chang Chen (Tsing Hua University, Taiwan, China)
Yuntao Qian (Zhejiang University, China)
Zhengxing Sun (Nanjing University, China)
Zhigeng Pan (Zhejiang University, China)
Zhi-hua Zhou (Nanjing University, China)

Additional Reviewer List

Aimin Pan (Microsoft Research Asia, China)
Alin Alecu (Vrije Universiteit Brussel, Belgium)
Arnaud Dupuis (IRISA - INRIA, France)
Bart Jansen (Vrije Universiteit Brussel, Belgium)
Bin Li (Nanyang Technological University, Singapore)
Caroline Fontaine (IRISA - CNRS, France)
Chiyomi Miyajima (Nagoya University, Japan)
Christel Chamaret (IRISA - INRIA, France)
Dan Costin (Vrije Universiteit Brussel, Belgium)
Daoqiang Zhang (Nanjing University, China)
Duc Tran (University of Dayton, USA)
Emilie Dumont (Institut Eurecom, France)
Fabio Verdicchio (Vrije Universiteit Brussel, Belgium)
Fenn-Huei Sheu (Taiwan Ocean University, Taiwan, China)
Georgios Patsis (Vrije Universiteit Brussel, Belgium)
Guillaume Gravier (IRISA - CNRS, France)
Helene Richy (IRISA - Universite de Rennes 1, France)
Huiyang Zhou (University of Central Florida, USA)
Jan Lievens (Vrije Universiteit Brussel, Belgium)
Jean-Luc Dugelay (Institut Eurecom, France)
Jie Tang (Nanjing University, China)
Jing Tian (Nanyang Technological University, Singapore)
Jinhua Guo (University of Michigan-Dearborn, USA)
Joakim Jiten (Institut Eurecom, France)
Jong-il Park (Hanyang University, Korea)
Julien Bourgeois (Universite de France-Comte, France)
Kazuya Kodama (National Institute of Informatics, Japan)
Keiji Yanai (University of Electro-Communications, Japan)
Kenny Wang (Wayne State University, USA)
Khanh Vu (University of Central Florida, USA)
Lei Chen (HKUST, China)

Luce Morin (IRISA - Universite de Rennes 1, France)
Mei Han (NEC Labs, USA)
Mikio Ikeda (Yokkaichi University, Japan)
Min Feng (Microsoft Research Asia, China)
Motohiko Isaka (Kwansei Gakuin University, Japan)
Nilesh Patel (University of Michigan-Dearborn, USA)
Olivier Crave (IRISA - INRIA, France)
Remi Trichet (Institut Eurecom, France)
Rudi Deklerck (Vrije Universiteit Brussel, Belgium)
Shengyang Dai (Northwestern University, USA)
Steven Tondeur (Vrije Universiteit Brussel, Belgium)
Tai Mei (Microsoft Research Asia, China)
Takanori Nishino (Nagoya University, Japan)
Teddy Furon (IRISA - INRIA, France)
Tim Bruylants (Vrije Universiteit Brussel, Belgium)
Tim Dams (Vrije Universiteit Brussel - Hogeschool Antwerpen, Belgium)
Tom Clerckx (Vrije Universiteit Brussel, Belgium)
Tomokazu Takahashi (JSPS/Nagoya University, Japan)
Venkatesh Babu (Norwegian University of Science and Technology, Norway)
Werner Verhelst (Vrije Universiteit Brussel, Belgium)
Whoi-Yul Yura Kim (Hanyang University, Korea)
Xavier Naturel (IRISA - INRIA, France)
Xiao Wu (City University of Hong Kong, Hong Kong)
Xiaoyan Sun (Microsoft Research Asia, China)
Yan Lu (Microsoft Research Asia, China)
Yan Zhang (Nanjing University, China)
Ying Cai (Iowa State University, USA)
Yuan Yuan (Aston University, UK)
Yves Mathieu (Ecole Nationale Superieure des Telecommunications, France)

Sponsoring Institutions

National Natural Science Foundation of China
Insigma Technology Co.,Ltd
Microsoft Reasearch
Y.C. Tang Disciplinary Development Fund (Zhejiang University, China)

Lecture Notes in Computer Science

For information about Vols. 1–4194

please contact your bookseller or Springer

- Vol. 4278: R. Meersman, Z. Tari, P. Herrero (Eds.), On the Move to Meaningful Internet Systems 2006: OTM 2006 Workshops, Part II. XLV, 1004 pages. 2006.
- Vol. 4277: R. Meersman, Z. Tari, P. Herrero (Eds.), On the Move to Meaningful Internet Systems: OTM 2006 Workshops, Part I. XLV, 1009 pages. 2006.
- Vol. 4276: R. Meersman, Z. Tari (Eds.), On the Move to Meaningful Internet Systems 2006: CoopIS, DOA, GADA, and ODBASE, Part II. XXXII, 752 pages. 2006.
- Vol. 4275: R. Meersman, Z. Tari (Eds.), On the Move to Meaningful Internet Systems 2006: CoopIS, DOA, GADA, and ODBASE, Part I. XXXI, 1115 pages. 2006.
- Vol. 4272: P. Havinga, M. Lijding, N. Meratnia, M. Weggdam (Eds.), Smart Sensing and Context. XI, 267 pages. 2006.
- Vol. 4271: F.V. Fomin (Ed.), Graph-Theoretic Concepts in Computer Science. XIII, 358 pages. 2006.
- Vol. 4270: H. Zha, Z. Pan, H. Thwaites, A.C. Addison, M. Forte (Eds.), Interactive Technologies and Sociotechnical Systems. XVI, 547 pages. 2006.
- Vol. 4269: R. State, S. van der Meer, D. O'Sullivan, T. Pfeifer (Eds.), Large Scale Management of Distributed Systems. XIII, 282 pages. 2006.
- Vol. 4268: G. Parr, D. Malone, M. Ó Foghlú (Eds.), Autonomic Principles of IP Operations and Management. XIII, 237 pages. 2006.
- Vol. 4267: A. Helmy, B. Jennings, L. Murphy, T. Pfeifer (Eds.), Autonomic Management of Mobile Multimedia Services. XIII, 257 pages. 2006.
- Vol. 4266: H. Yoshiura, K. Sakurai, K. Rannenberg, Y. Murayama, S. Kawamura (Eds.), Advances in Information and Computer Security. XIII, 438 pages. 2006.
- Vol. 4265: N. Lavrač, L. Todorovski, K.P. Jantke (Eds.), Discovery Science. XIV, 384 pages. 2006. (Sublibrary LNAI).
- Vol. 4264: J.L. Balcázar, P.M. Long, F. Stephan (Eds.), Algorithmic Learning Theory. XIII, 393 pages. 2006. (Sublibrary LNAI).
- Vol. 4263: A. Levi, E. Savas, H. Yenigün, S. Balcisoy, Y. Saygin (Eds.), Computer and Information Sciences – ISCIS 2006. XXIII, 1084 pages. 2006.
- Vol. 4261: Y. Zhuang, S. Yang, Y. Rui, Q. He (Eds.), Advances in Multimedia Information Processing - PCM 2006. XXII, 1040 pages. 2006.
- Vol. 4260: Z. Liu, J. He (Eds.), Formal Methods and Software Engineering. XII, 778 pages. 2006.
- Vol. 4259: S. Greco, Y. Hata, S. Hirano, M. Inuiguchi, S. Miyamoto, H.S. Nguyen, R. Słowiński (Eds.), Rough Sets and Current Trends in Computing. XXII, 951 pages. 2006. (Sublibrary LNAI).
- Vol. 4257: I. Richardson, P. Runeson, R. Messnarz (Eds.), Software Process Improvement. XI, 219 pages. 2006.
- Vol. 4256: L. Feng, G. Wang, C. Zeng, R. Huang (Eds.), Web Information Systems – WISE 2006 Workshops. XIV, 320 pages. 2006.
- Vol. 4255: K. Aberer, Z. Peng, E.A. Rundensteiner, Y. Zhang, X. Li (Eds.), Web Information Systems – WISE 2006. XIV, 563 pages. 2006.
- Vol. 4254: T. Grust, H. Höpfner, A. Illarramendi, S. Jablonski, M. Mesiti, S. Müller, P.-L. Patranjan, K.-U. Sattler, M. Spiliopoulou (Eds.), Current Trends in Database Technology – EDBT 2006. XXXI, 932 pages. 2006.
- Vol. 4253: B. Gabrys, R.J. Howlett, L.C. Jain (Eds.), Knowledge-Based Intelligent Information and Engineering Systems, Part III. XXXII, 1301 pages. 2006. (Sublibrary LNAI).
- Vol. 4252: B. Gabrys, R.J. Howlett, L.C. Jain (Eds.), Knowledge-Based Intelligent Information and Engineering Systems, Part II. XXXIII, 1335 pages. 2006. (Sublibrary LNAI).
- Vol. 4251: B. Gabrys, R.J. Howlett, L.C. Jain (Eds.), Knowledge-Based Intelligent Information and Engineering Systems, Part I. LXVI, 1297 pages. 2006. (Sublibrary LNAI).
- Vol. 4249: L. Goubin, M. Matsui (Eds.), Cryptographic Hardware and Embedded Systems - CHES 2006. XII, 462 pages. 2006.
- Vol. 4248: S. Staab, V. Svátek (Eds.), Engineering Knowledge in the Age of the Semantic Web. XIV, 400 pages. 2006. (Sublibrary LNAI).
- Vol. 4247: T.-D. Wang, X. Li, S.-H. Chen, X. Wang, H. Abbass, H. Iba, G. Chen, X. Yao (Eds.), Simulated Evolution and Learning. XXI, 940 pages. 2006.
- Vol. 4246: M. Hermann, A. Voronkov (Eds.), Logic for Programming, Artificial Intelligence, and Reasoning. XIII, 588 pages. 2006. (Sublibrary LNAI).
- Vol. 4245: A. Kuba, L.G. Nyúl, K. Palágyi (Eds.), Discrete Geometry for Computer Imagery. XIII, 688 pages. 2006.
- Vol. 4244: S. Spaccapietra (Ed.), Journal on Data Semantics VII. XI, 267 pages. 2006.
- Vol. 4243: T. Yakhno, E.J. Neuhold (Eds.), Advances in Information Systems. XIII, 420 pages. 2006.
- Vol. 4241: R.R. Beichel, M. Sonka (Eds.), Computer Vision Approaches to Medical Image Analysis. XI, 262 pages. 2006.
- Vol. 4239: H.Y. Youn, M. Kim, H. Morikawa (Eds.), Ubiquitous Computing Systems. XVI, 548 pages. 2006.

- Vol. 4238: Y.-T. Kim, M. Takano (Eds.), Management of Convergence Networks and Services. XVIII, 605 pages. 2006.
- Vol. 4237: H. Leitold, E. Markatos (Eds.), Communications and Multimedia Security. XII, 253 pages. 2006.
- Vol. 4236: L. Breveglieri, I. Koren, D. Naccache, J.-P. Seifert (Eds.), Fault Diagnosis and Tolerance in Cryptography. XIII, 253 pages. 2006.
- Vol. 4234: I. King, J. Wang, L. Chan, D. Wang (Eds.), Neural Information Processing, Part III. XXII, 1227 pages. 2006.
- Vol. 4233: I. King, J. Wang, L. Chan, D. Wang (Eds.), Neural Information Processing, Part II. XXII, 1203 pages. 2006.
- Vol. 4232: I. King, J. Wang, L. Chan, D. Wang (Eds.), Neural Information Processing, Part I. XLVI, 1153 pages. 2006.
- Vol. 4231: J. F. Roddick, R. Benjamins, S.S.-S. Cherfi, R. Chiang, C. Claramunt, R. Elmasri, F. Grandi, H. Han, M. Hepp, M. Hepp, M. Lytras, V.B. Mišić, G. Poels, I.-Y. Song, J. Trujillo, C. Vangenot (Eds.), Advances in Conceptual Modeling - Theory and Practice. XXII, 456 pages. 2006.
- Vol. 4229: E. Najm, J.F. Pradat-Peyre, V.V. Donzeau-Gouge (Eds.), Formal Techniques for Networked and Distributed Systems - FORTE 2006. X, 486 pages. 2006.
- Vol. 4228: D.E. Lightfoot, C.A. Szyperski (Eds.), Modular Programming Languages. X, 415 pages. 2006.
- Vol. 4227: W. Nejdl, K. Tochtermann (Eds.), Innovative Approaches for Learning and Knowledge Sharing. XVII, 721 pages. 2006.
- Vol. 4226: R.T. Mittermeir (Ed.), Informatics Education – The Bridge between Using and Understanding Computers. XVII, 319 pages. 2006.
- Vol. 4225: J.F. Martínez-Trinidad, J.A. Carrasco Ochoa, J. Kittler (Eds.), Progress in Pattern Recognition, Image Analysis and Applications. XIX, 995 pages. 2006.
- Vol. 4224: E. Corchado, H. Yin, V. Botti, C. Fyfe (Eds.), Intelligent Data Engineering and Automated Learning – IDEAL 2006. XXVII, 1447 pages. 2006.
- Vol. 4223: L. Wang, L. Jiao, G. Shi, X. Li, J. Liu (Eds.), Fuzzy Systems and Knowledge Discovery. XXVIII, 1335 pages. 2006. (Sublibrary LNAI).
- Vol. 4222: L. Jiao, L. Wang, X. Gao, J. Liu, F. Wu (Eds.), Advances in Natural Computation, Part II. XLII, 998 pages. 2006.
- Vol. 4221: L. Jiao, L. Wang, X. Gao, J. Liu, F. Wu (Eds.), Advances in Natural Computation, Part I. XLI, 992 pages. 2006.
- Vol. 4219: D. Zamboni, C. Kruegel (Eds.), Recent Advances in Intrusion Detection. XII, 331 pages. 2006.
- Vol. 4218: S. Graf, W. Zhang (Eds.), Automated Technology for Verification and Analysis. XIV, 540 pages. 2006.
- Vol. 4217: P. Cuenca, L. Orozco-Barbosa (Eds.), Personal Wireless Communications. XV, 532 pages. 2006.
- Vol. 4216: M.R. Berthold, R. Glen, I. Fischer (Eds.), Computational Life Sciences II. XIII, 269 pages. 2006. (Sublibrary LNBI).
- Vol. 4215: D.W. Embley, A. Olivé, S. Ram (Eds.), Conceptual Modeling - ER 2006. XVI, 590 pages. 2006.
- Vol. 4213: J. Fürnkranz, T. Scheffer, M. Spiliopoulou (Eds.), Knowledge Discovery in Databases: PKDD 2006. XXII, 660 pages. 2006. (Sublibrary LNAI).
- Vol. 4212: J. Fürnkranz, T. Scheffer, M. Spiliopoulou (Eds.), Machine Learning: ECML 2006. XXIII, 851 pages. 2006. (Sublibrary LNAI).
- Vol. 4211: P. Vogt, Y. Sugita, E. Tuci, C. Nehaniv (Eds.), Symbol Grounding and Beyond. VIII, 237 pages. 2006. (Sublibrary LNAI).
- Vol. 4210: C. Priami (Ed.), Computational Methods in Systems Biology. X, 323 pages. 2006. (Sublibrary LNBI).
- Vol. 4209: F. Crestani, P. Ferragina, M. Sanderson (Eds.), String Processing and Information Retrieval. XIV, 367 pages. 2006.
- Vol. 4208: M. Gerndt, D. Kranzlmüller (Eds.), High Performance Computing and Communications. XXII, 938 pages. 2006.
- Vol. 4207: Z. Ésik (Ed.), Computer Science Logic. XII, 627 pages. 2006.
- Vol. 4206: P. Dourish, A. Friday (Eds.), UbiComp 2006: Ubiquitous Computing. XIX, 526 pages. 2006.
- Vol. 4205: G. Bourque, N. El-Mabrouk (Eds.), Comparative Genomics. X, 231 pages. 2006. (Sublibrary LNBI).
- Vol. 4204: F. Benhamou (Ed.), Principles and Practice of Constraint Programming - CP 2006. XVIII, 774 pages. 2006.
- Vol. 4203: F. Esposito, Z.W. Raś, D. Malerba, G. Semeraro (Eds.), Foundations of Intelligent Systems. XVIII, 767 pages. 2006. (Sublibrary LNAI).
- Vol. 4202: E. Asarin, P. Bouyer (Eds.), Formal Modeling and Analysis of Timed Systems. XI, 369 pages. 2006.
- Vol. 4201: Y. Sakakibara, S. Kobayashi, K. Sato, T. Nishino, E. Tomita (Eds.), Grammatical Inference: Algorithms and Applications. XII, 359 pages. 2006. (Sublibrary LNAI).
- Vol. 4200: I.F.C. Smith (Ed.), Intelligent Computing in Engineering and Architecture. XIII, 692 pages. 2006. (Sublibrary LNAI).
- Vol. 4199: O. Nierstrasz, J. Whittle, D. Harel, G. Reggio (Eds.), Model Driven Engineering Languages and Systems. XVI, 798 pages. 2006.
- Vol. 4198: O. Nasraoui, O. Zaiane, M. Spiliopoulou, B. Mobasher, B. Masand, P. Yu (Eds.), Advances in Web Mining and Web Usage Analysis. IX, 177 pages. 2006. (Sublibrary LNAI).
- Vol. 4197: M. Raubal, H.J. Miller, A.U. Frank, M.F. Goodechild (Eds.), Geographic, Information Science. XIII, 419 pages. 2006.
- Vol. 4196: K. Fischer, I.J. Timm, E. André, N. Zhong (Eds.), Multiagent System Technologies. X, 185 pages. 2006. (Sublibrary LNAI).
- Vol. 4195: D. Gaiti, G. Pujolle, E. Al-Shaer, K. Calvert, S. Dobson, G. Leduc, O. Martikainen (Eds.), Autonomic Networking. IX, 316 pages. 2006.

Table of Contents

Expressive Speech Recognition and Synthesis as Enabling Technologies for Affective Robot-Child Communication	1
<i>Selma Yilmazyildiz, Wesley Mattheyses, Yorgos Patsis, Werner Verhelst</i>	
Embodied Conversational Agents: Computing and Rendering Realistic Gaze Patterns	9
<i>Gérard Bailly, Frédéric Elisei, Stephan Raidt, Alix Casari, Antoine Picot</i>	
DBN Based Models for Audio-Visual Speech Analysis and Recognition	19
<i>Ilse Ravyse, Dongmei Jiang, Xiaoyue Jiang, Guoyun Lv, Yunshu Hou, Hichem Sahli, Rongchun Zhao</i>	
An Extensive Method to Detect the Image Digital Watermarking Based on the Known Template	31
<i>Yang Feng, Senlin Luo, Linmin Pan</i>	
Fast Mode Decision Algorithm in H.263+/H.264 Intra Transcoder	41
<i>Min Li, Guiming He</i>	
Binary Erasure Codes for Packet Transmission Subject to Correlated Erasures	48
<i>Frederik Vanhaverbeke, Frederik Simoens, Marc Moeneclaey, Danny De Vleeschauwer</i>	
Image Desynchronization for Secure Collusion-Resilient Fingerprint in Compression Domain	56
<i>Zhongxuan Liu, Shiguo Lian, Zhen Ren</i>	
A Format-Compliant Encryption Framework for JPEG2000 Image Code-Streams in Broadcasting Applications	64
<i>Jinyong Fang, Jun Sun</i>	
Euclidean Distance Transform of Digital Images in Arbitrary Dimensions	72
<i>Dong Xu, Hua Li</i>	
JPEG2000 Steganography Possibly Secure Against Histogram-Based Attack	80
<i>Hideki Noda, Yohsuke Tsukamizu, Michiharu Niimi</i>	

Perceptual Depth Estimation from a Single 2D Image Based on Visual Perception Theory	88
<i>Bing Li, De Xu, Songhe Feng, Aimin Wu, Xu Yang</i>	
A System for Generating Personalized Virtual News	96
<i>Jian-Jun Xu, Jun Wen, Dan-Wen Chen, Yu-Xiang Xie, Ling-Da Wu</i>	
Image Fingerprinting Scheme for Print-and-Capture Model	106
<i>Won-gyung Kim, Seon Hwa Lee, Yong-seok Seo</i>	
16×16 Integer Cosine Transform for HD Video Coding.....	114
<i>Jie Dong, King Ngi Ngan</i>	
Heegard-Berger Video Coding Using LMMSE Estimator	122
<i>Xiaopeng Fan, Oscar Au, Yan Chen, Jiantao Zhou</i>	
Real-Time BSD-Driven Adaptation Along the Temporal Axis of H.264/AVC Bitstreams	131
<i>Wesley De Neve, Davy De Schrijver, Davy Van Deursen, Peter Lambert, Rik Van de Walle</i>	
Optimal Image Watermark Decoding	141
<i>Wenming Lu, Wanqing Li, Rei Safavi-Naini, Philip Ogunbona</i>	
Diagonal Discrete Cosine Transforms for Image Coding	150
<i>Jingjing Fu, Bing Zeng</i>	
Synthesizing Variational Direction and Scale Texture on Planar Region	159
<i>Yan-Wen Guo, Xiao-Dong Xu, Xi Chen, Jin Wang, Qun-Sheng Peng</i>	
Fast Content-Based Image Retrieval Based on Equal-Average K-Nearest-Neighbor Search Schemes	167
<i>Zhe-Ming Lu, Hans Burkhardt, Sebastian Boehmer</i>	
Characterizing User Behavior to Improve Quality of Streaming Service over P2P Networks	175
<i>Yun Tang, Lifeng Sun, Jianguang Luo, Yuzhuo Zhong</i>	
Interacting Activity Recognition Using Hierarchical Durational-State Dynamic Bayesian Network	185
<i>Youtian Du, Feng Chen, Wenli Xu, Weidong Zhang</i>	

Improving the Image Retrieval Results Via Topic Coverage Graph	193
<i>Kai Song, Yonghong Tian, Tiejun Huang</i>	
Relevance Feedback for Sketch Retrieval Based on Linear Programming Classification	201
<i>Bin Li, Zhengxing Sun, Shuang Liang, Yaoye Zhang, Bo Yuan</i>	
Hierarchical Motion-Compensated Frame Interpolation Based on the Pyramid Structure	211
<i>Gun-Ill Lee, Rae-Hong Park</i>	
Varying Microphone Patterns for Meeting Speech Segmentation Using Spatial Audio Cues	221
<i>Eva Cheng, Ian Burnett, Christian Ritz</i>	
Region-Based Sub-pixel Motion Estimation from Noisy, Blurred, and Down-Sampled Sequences	229
<i>Osama A. Omer, Toshihisa Tanaka</i>	
Differential Operation Based Palmprint Authentication for Multimedia Security	237
<i>Xiangqian Wu, Kuanquan Wang, David Zhang</i>	
A Broadcast Model for Web Image Annotation	245
<i>Jia Li, Ting Liu, Weiqiang Wang, Wen Gao</i>	
An Approach to the Compression of Residual Data with GPCA in Video Coding	252
<i>Lei Yao, Jian Liu, Jiangqin Wu</i>	
A Robust Approach for Object Recognition	262
<i>Yuanning Li, Weiqiang Wang, Wen Gao</i>	
A Novel Method for Spoken Text Feature Extraction in Semantic Video Retrieval	270
<i>Juan Cao, Jintao Li, Yongdong Zhang, Sheng Tang</i>	
A Semantic Image Category for Structuring TV Broadcast Video Streams	279
<i>Jinqiao Wang, Lingyu Duan, Hanqing Lu, Jesse S. Jin</i>	
Markov Chain Monte Carlo Super-Resolution Image Reconstruction with Simultaneous Adaptation of the Prior Image Model	287
<i>Jing Tian, Kai-Kuang Ma</i>	

Text Detection in Images Using Texture Feature from Strokes	295
<i>Caifeng Zhu, Weiqiang Wang, Qianhui Ning</i>	
Robust Mandarin Speech Recognition for Car Navigation Interface	302
<i>Pei Ding, Lei He, Xiang Yan, Rui Zhao, Jie Hao</i>	
GKDA: A Group-Based Key Distribution Algorithm for WiMAX MBS Security	310
<i>Huijie Li, Guangbin Fan, Jigang Qiu, Xiaokang Lin</i>	
A Watermarking Algorithm for JPEG File	319
<i>Hongmei Liu, Huiying Fu, Jiwu Huang</i>	
SNR Scalability in H.264/AVC Using Data Partitioning.....	329
<i>Stefaan Mys, Peter Lambert, Wesley De Neve, Piet Verhoeve, Rik Van de Walle</i>	
A Real-Time XML-Based Adaptation System for Scalable Video Formats	339
<i>Davy Van Deursen, Davy De Schrijver, Wesley De Neve, Rik Van de Walle</i>	
Generic, Scalable Multimedia Streaming and Delivery with Example Application for H.264/AVC	349
<i>Joseph Thomas-Kerr, Ian Burnett, Christian Ritz</i>	
Shape-Based Image Retrieval in Botanical Collections	357
<i>Itheri Yahiaoui, Nicolas Hervé, Nozha Boujemaa</i>	
Macroblock Mode Decision Scheme for Fast Encoding in H.264/AVC	365
<i>Donghyung Kim, Joohyun Lee, Kicheol Jeon, Jechang Jeong</i>	
A Mathematical Model for Interaction Analysis Between Multiview Video System and User	375
<i>You Yang, Gangyi Jiang, Mei Yu, Zhu Peng</i>	
Motion Composition of 3D Video	385
<i>Jianfeng Xu, Toshihiko Yamasaki, Kiyoharu Aizawa</i>	
EKM: An Efficient Key Management Scheme for Large-Scale Peer-to-Peer Media Streaming	395
<i>Feng Qiu, Chuang Lin, Hao Yin</i>	
Using Earth Mover's Distance for Audio Clip Retrieval	405
<i>Yuxin Peng, Cuihua Fang, Xiaoou Chen</i>	

Streaming-Mode MB-Based Integral Image Techniques for Fast Multi-view Video Illumination Compensation	414
<i>Jiangbo Lu, Gauthier Lafruit, Francky Catthoor</i>	
A Motion Vector Predictor Architecture for AVS and MPEG-2 HDTV Decoder	424
<i>Junhao Zheng, Di Wu, Lei Deng, Don Xie, Wen Gao</i>	
Inter-camera Coding of Multi-view Video Using Layered Depth Image Representation	432
<i>Seung-Uk Yoon, Eun-Kyung Lee, Sung-Yeol Kim, Yo-Sung Ho, Kugjin Yun, Sukhee Cho, Namho Hur</i>	
Optimal Priority Packetization with Multi-layer UEP for Video Streaming over Wireless Network	442
<i>Huanying Zou, Chuang Lin, Hao Yin, Zhen Chen, Feng Qiu, Xuening Liu</i>	
A Multi-channel MAC Protocol with Dynamic Channel Allocation in CDMA Ad Hoc Networks	450
<i>Jigang Qiu, Guangbin Fan, Huijie Li, Xiaokang Lin</i>	
Fuzzy Particle Swarm Optimization Clustering and Its Application to Image Clustering	459
<i>Wensheng Yi, Min Yao, Zhiwei Jiang</i>	
A New Fast Motion Estimation for H.264 Based on Motion Continuity Hypothesis	468
<i>Juhua Pu, Zhang Xiong, Lionel M. Ni</i>	
Statistical Robustness in Multiplicative Watermark Detection	477
<i>Xingliang Huang, Bo Zhang</i>	
Adaptive Visual Regions Categorization with Sets of Points of Interest ...	485
<i>Hichem Houissa, Nozha Boujemaa, Hichem Frigui</i>	
A Publishing Framework for Digitally Augmented Paper Documents: Towards Cross-Media Information Integration	494
<i>Xiaoqing Lu, Zhiwu Lu</i>	
Web-Based Semantic Analysis of Chinese News Video	502
<i>Huamin Feng, Zongqiang Pang, Kun Qiu, Guosen Song</i>	
A Quality-Controllable Encryption for H.264/AVC Video Coding	510
<i>Guang-Ming Hong, Chun Yuan, Yi Wang, Yu-Zhuo Zhong</i>	