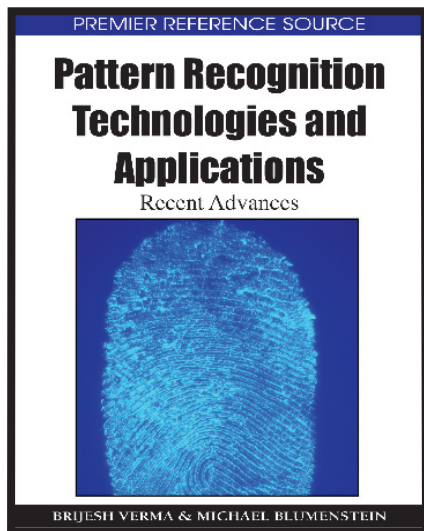


New Release

June 2008

Pattern Recognition Technologies and Applications: Recent Advances



“This book describes theoretical and applied research work in areas such as handwriting recognition, signature verification, speech recognition, human detection, gender classification, support vector machines for biomedical data and unified support vector machines.”

- **Brijesh Verma, Queensland University, Australia**

Subject:

Artificial Intelligence; Multimedia Technology; Internet and Web Technologies and Services; Electronic Commerce; Information Security, Privacy, and Ethics; Databases, Data Mining, and Data Warehousing

Market:

This essential publication is for all academic research libraries, as well as those involved in identity verification, computer security, and digital recognition technologies. Academics, researchers, practitioners, and students with related interests will also find this publication useful.

Excellent addition to your library! Recommend to your acquisitions librarian.

Edited by: Brijesh Verma, Queensland University, Australia; Michael Blumenstein, Griffith University, Australia

13-digit ISBN: 978-1-59904-807-9

454 pages; 2008 Copyright

Price: US \$180.00 (hardcover and online access*)

Pre-pub price[§]: US \$165.00

Online Access only^{**}: US \$132.00

Illustrations: figures, tables (8 1/2" x 11")

Translation Rights: World

*Paperback is not available. [§]Pre-pub price is good through one month after publication.

The nature of handwriting in our society has significantly altered over the ages due to the introduction of new technologies such as computers and the World Wide Web. With increases in the amount of signature verification needs, state of the art internet and paper-based automated recognition methods are necessary.

Pattern Recognition Technologies and Applications: Recent Advances provides cutting-edge pattern recognition techniques and applications. Written by world-renowned experts in their field, this easy to understand book is a must have for those seeking explanation in topics such as on- and offline handwriting and speech recognition, signature verification, and gender classification.



Pattern Recognition Technologies and Applications: Recent Advances

Edited by: **Brijesh Verma, Queensland University, Australia; Michael Blumenstein, Griffith University, Australia**

Table of Contents

Chapter I: Fusion of Segmentation Strategies for Off-Line Cursive Handwriting Recognition

Brijesh Verma, Central Queensland University, Australia
Michael Blumenstein, Griffith University, Australia

Chapter II: Elastic Matching Techniques for Handwritten Character Recognition

Seiichi Uchida, Kyushu University, Japan

Chapter III: State of the Art in Off-Line Signature Verification

Luana Batista, École de Technologie Supérieure, Canada
Dominique Rivard, École de Technologie Supérieure, Canada
Robert Sabourin, École de Technologie Supérieure, Canada
Eric Granger, École de Technologie Supérieure, Canada
Patrick Maupin, Defence Research and Development Canada

Chapter IV: An Automatic Offline Signature Verification and Forgery Detection System

Vamsi Krishna Madasu, Queensland University of Technology, Australia
Brian C. Lovell, NICTA Limited, Australia and University of Queensland, Australia

Chapter V: Introduction to Speech Recognition

Sergio Suárez-Guerra, National Polytechnic Institute of Mexico, Mexico
Jose Luis Oropeza-Rodriguez, National Polytechnic Institute of Mexico, Mexico

Chapter VI: Seeking Patterns for the Forensic Analysis of Handwriting and Speech

Graham Leedham, University of New South Wales (Asia), Singapore
Vladimir Pervouchine, University of New South Wales (Asia), Singapore
Haishan Zhong, Nanyang Technological University, Singapore

Chapter VII: Image Pattern Recognition Based Morphological Structure and Applications

Donggang Yu, School of Information Technology, Australia
Tuan D. Pham, School of Information Technology, Australia
Hong Yan, City University of Hong Kong, Hong Kong

Chapter VIII: Robust Face Recognition Technique for a Real-Time Embedded Face Recognition System

Ting Shan, University of Queensland, Australia
Abbas Bigdeli, National ICT Australia, Australia
Brian Lovell, University of Queensland, Australia
Shaokang Chen, University of Queensland, Australia

Chapter IX: Occlusion Sequence Mining for Activity Discovery from Surveillance Videos

Prithwijit Guha, Indian Institute of Technology, India
Amitabha Mukerjee, Indian Institute of Technology, India
K.S. Venkatesh, Indian Institute of Technology, India
Chapter X: Human Detection in Static Images
Hui-Xing Jia, Tsinghua University, China
Yu-Jin Zhang, Tsinghua University, China

Chapter XI: A Brain-Inspired Visual Pattern Recognition Architecture and its Applications

Fok Hing Chi Tivive, University of Wollongong, Australia
Abdesselam Bouzerdoum, University of Wollongong, Australia

Chapter XII: Significance of Logic Synthesis in FPGA-Based Design of Image and Signal Processing Systems

Mariusz Rawski, Warsaw University of Technology, Poland
Henry Selvaraj, University of Nevada, USA
Bogdan J. Falkowski, Nanyang Technological University, Singapore
Tadeusz Luba, Warsaw University of Technology, Poland

Chapter XIII: A Novel Support Vector Machine with Class-Dependent Features for Biomedical Data

Nina Zhou, Nanyang Technological University, Singapore
Lipo Wang, Nanyang Technological University, Singapore

Chapter XIV: A Unified Approach to Support Vector Machines

Alistair Shilton, University Of Melbourne, Australia
Marimuthu Palaniswami, University Of Melbourne, Australia

Chapter XV: Cluster Ensemble and Multi-Objective Clustering Methods

Katti Faceli, University of São Paulo, Brazil
Andre C. P. L. F. de Carvalho, University of São Paulo, Brazil
Marcilio C. P. de Souto, Federal University of Rio Grande do Norte, Brazil

Chapter XVI: Implementing Negative Correlation Learning in Evolutionary Ensembles with Suitable Speciation Techniques

Pete Duell, University of Birmingham, UK
Xin Yao, University of Birmingham, UK

Chapter XVII: A Recurrent Probabilistic Neural Network for EMG Pattern Recognition

Toshio Tsuji, Hiroshima University, Japan
Nan Bu, Hiroshima University, Japan
Osamu Fukuda, National Institute of Advanced Industrial Science and Technology (AIST), Japan

About the Editor:

Brijesh Verma is Associate Professor in the School of Computing Sciences at Central Queensland University. His research interests include pattern recognition and computational intelligence. He has authored/co-authored 11 books (1 text book, 10 edited books), 5 book chapters and 101 papers in refereed international journals and conference proceedings. He has supervised 29 research students including 7 PhD students in the areas of pattern recognition and computational intelligence. He has received (chief investigator/co-chief investigator) 11 research grants including ARC and industry linkage grants. He is editors-in-chief of International Journal of Computational Intelligence and Applications (IJCIA) published by World Scientific and an associate editor of IEEE Transaction on Biomedicine in Information Technology. He is serving/has served on organizing, program and advisory committees of over 35 national and international conferences. He is a Senior Member of IEEE, IEEE Computational Intelligence Society and a member of International Neural Network Society (INNS). He is a chair of IEEE Computational Intelligence Queensland Chapter.

Michael Blumenstein is Senior Lecturer and Head of the School of Information and Communication Technology, Griffith University, Gold Coast Campus. His research interests include the areas of Pattern Recognition and Computational Intelligence. His research spans such topics as automated handwriting recognition, the analysis of video imagery for automatic object detection (surveillance) and numerous applications of Artificial Intelligence to the fields of Engineering, Environmental Science and Coastal Management. Dr Blumenstein has published over 50 papers in peer-reviewed conferences and journals in his areas of expertise and has been invited to serve on numerous national/international conference committees in the fields of pattern recognition and computational intelligence.

Excellent addition to your library! Recommend to your acquisitions librarian.

www.info-sci-ref.com