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Nota di contenuto	Biometrics -- Biometrics: When Identity Matters -- Face Recognition: Technical Challenges and Research Directions -- Fingerprints: Recognition, Performance Evaluation and Synthetic Generation -- Recognising Persons by Their Iris Patterns -- Multiple Classifier Fusion for Biometric Authentication -- Performance Evaluation in 1 : 1 Biometric Engines -- Best Performing Biometric Engines -- Discussions on Some Problems in Face Recognition -- Improving Fingerprint Recognition Performance Based on Feature Fusion and Adaptive

Registration Pattern -- Iris Recognition Based on Non-local Comparisons -- Palmprint Authentication Technologies, Systems and Applications -- Face Recognition -- Novel Face Detection Method Based on Gabor Features -- Optimal Shape Space and Searching in ASM Based Face Alignment -- Gabor Wavelet-Based Eyes and Mouth Detection Algorithm -- An Entropy-Based Diversity Measure for Classifier Combining and Its Application to Face Classifier Ensemble Thinning -- Estimating the Visual Direction with Two-Circle Algorithm -- Multiple Face Contour Detection Using Adaptive Flows -- Pose Normalization Using Generic 3D Face Model as a Priori for Pose-Insensitive Face Recognition -- Gabor-Based Kernel Fisher Discriminant Analysis for Pose Discrimination -- Robust Pose Estimation of Face Using Genetic Algorithm -- Facial Pose Estimation Based on the Mongolian Race's Feature Characteristic from a Monocular Image -- Boosting Local Binary Pattern (LBP)-Based Face Recognition -- Gabor Features Based Method Using HDR (G-HDR) for Multiview Face Recognition -- Face Recognition Under Varying Lighting Based on Derivates of Log Image -- A Fast Method of Lighting Estimate Using Multi-linear Algebra -- Face Recognition Using More than One Still Image: What Is More? -- Video-Based Face Recognition Using a Metric of Average Euclidean Distance -- 3D Face Recognition Based on G-H Shape Variation -- 3D Face Recognition Based on Geometrical Measurement -- 3D Face Recognition Using Eigen-Spectrum on the Flattened Facial Surface -- Building a 3D Morphable Face Model by Using Thin Plate Splines for Face Reconstruction -- 3D Surface Reconstruction Based on One Non-symmetric Face Image -- Recent Advances in Subspace Analysis for Face Recognition -- Component-Based Cascade Linear Discriminant Analysis for Face Recognition -- Unified Locally Linear Embedding and Linear Discriminant Analysis Algorithm (ULLELDA) for Face Recognition -- On Dimensionality Reduction for Client Specific Discriminant Analysis with Application to Face Verification -- The Solution Space for Fisher Discriminant Analysis and the Uniqueness Under Constraints -- A Novel One-Parameter Regularized Linear Discriminant Analysis for Solving Small Sample Size Problem in Face Recognition -- Fast Calculation for Fisher Criteria in Small Sample Size Problem -- Vision-Based Face Understanding Technologies and Their Applications -- International Standardization on Face Recognition Technology -- System Design and Assessment Methodology for Face Recognition Algorithms -- Baseline Evaluations on the CAS-PEAL-R1 Face Database -- An Efficient Compression and Reconstruction Method of Face Image for Low Rate Net -- How Can We Reconstruct Facial Image from Partially Occluded or Low-Resolution One? -- A Matrix-Oriented Method for Appearance-Based Data Compression -- An Idea from Group Representation Theory -- Fingerprint Recognition -- An Adaptive Fingerprint Post-processing Algorithm Based on Mathematical Morphology -- Fingerprint Image Segmentation by Energy of Gaussian-Hermite Moments -- Robust Ridge Following in Fingerprints -- A New Approach for Fingerprint Minutiae Extraction -- A Top-Down Fingerprint Image Enhancement Method Based on Fourier Analysis -- Fingerprint Templates Combination -- Skeletonization of Fingerprint Based-on Modulus Minima of Wavelet Transform -- Transformation-Variants Estimation Using Similarity Relative Histogram Grouping Model -- A Study of Minutiae Matching Algorithm Based on Orientation Validation -- Cascading a Couple of Registration Methods for a High Accurate Fingerprint Verification System -- A Hierarchical Fingerprint Matching Method Based on Rotation Invariant Features -- Phase-Correlation Based Registration of Swipe Fingerprints -- An Improved Method for

Singularity Detection of Fingerprint Images -- Fingerprint Classifier Using Embedded Hidden Markov Models -- A Robust Pseudoridges Extraction Algorithm for Fingerprints -- Iris Recognition -- Iris Image Capture System Design for Personal Identification -- An Iris Segmentation Procedure for Iris Recognition -- Zernike Moment Invariants Based Iris Recognition -- Two-Dimensional Projection and Crossing for Iris Optimal Localization -- Speaker Recognition -- Improvement of Speaker Identification by Combining Prosodic Features with Acoustic Features -- Bimodal Speaker Identification Using Dynamic Bayesian Network -- A Novel Pitch Period Detection Algorithm Based on Hilbert-Huang Transform -- Noisy Speech Pitch Detection Based on Mathematical Morphology and Weighted MACF -- Glottal Information Based Spectral Recuperation in Multi-channel Speaker Recognition -- Speaker Modeling Technique Based on Regression Class for Speaker Identification with Sparse Training -- Other Biometrics -- Some Issues Pertaining to Adaptive Multimodal Biometric Authentication -- Protecting Biometric Data for Personal Identification -- Digital Curvelet Transform for Palmprint Recognition -- On-line Writer Verification Using Force Features of Basic Strokes -- A Novel Force Sensitive Tablet for Handwriting Information Acquisition -- Shape and Structural Feature Based Ear Recognition -- LLE Based Gait Analysis and Recognition -- Personal Identification Using Knuckleprint -- AAM Based Matching of Hand Appearance for User Verification.

Sommario/riassunto

Following the previous four annual conferences, the 5th Chinese Conference on Biometrics Recognition (Sinobiometrics 2004) was held in Guangzhou, China in December 2004. The conference this year was aimed at promoting the international exchange of ideas and providing an opportunity for keeping abreast of the latest developments in biometric algorithms, systems, and applications. The 1st Biometrics Verification Competition (BVC) on face, iris, and fingerprint recognition was also conducted in conjunction with the conference. This book is composed of 74 papers presented at Sinobiometrics 2004, contributed by researchers and industrial practitioners from Korea, Japan, Singapore, Hong Kong, France, UK, US, as well as China. Of these, 60 papers were selected from 140 submissions and 14 were invited. The papers not only presented recent technical advances, but also addressed issues in biometric system design, standardization, and applications. Included among the invited were four feature papers on the ideas and algorithms of the best-performing biometric engines, which were either competition winners at the Face Authentication Test (FAT) 2004 or the Fingerprint Verification Competition (FVC) 2004, or they were the best-performing iris and palmprint recognition algorithms. The papers were complemented by five keynote lectures on biometrics, and face, fingerprint, and iris authentication and multimodal fusion by Arun Ross (West Virginia University) and Anil K. Jain (Michigan State University), Josef Kittler (University of Surrey), John Daugman (University of Cambridge), Raffaele Cappelli (University of Bologna), and Stan Z. Li (Chinese Academy of Sciences).
