

ICB 2009

3rd IAPR International Conference on Biometrics
2 - 5 June 2009, Alghero, Italy

<http://icb2009.uniss.it>

Technical Program

Tuesday, June 2nd

09:00 – 09:15	Registration
09:15 – 12:30	Tutorial session 1: BIOMETRICS: ETHICS, PRIVACY AND SECURITY <i>Speakers: Emilio Mordini and Terry Boulton</i>
12:30 – 14:00	Lunch break
14:00 – 18:30	Tutorial session 2: BIOMETRICS: ETHICS, PRIVACY AND SECURITY <i>Speakers: Emilio Mordini and Terry Boulton</i>

Wednesday, June 3rd

09:00 – 09:30	Opening session
09:30 – 10:30	Keynote speech – Chair: Massimo Tistarelli <i>What can machine vision learn from human perception?</i> Heinrich H. Bülthoff Max Planck Institute for Biological Cybernetics, Tübingen, Germany
10:30 – 11:00	Coffee Break
11:00 – 12:30	Oral Session I (Face-1) – Chair: Larry Davis
	<i>Facial geometry estimation using photometric stereo and profile views</i> Atkinson, Smith, Smith, Farooq
	<i>3D Signatures for Fast 3D Face Recognition</i> Boehnen, Flynn, Peters
	<i>3D Face Recognition Using Joint Differential Invariants</i> Cadoni, Bicego, Grosso
	<i>Pose Normalization for Local Appearance-Based Face Recognition</i> Gao, Ekenel, Stiefelhagen
12:30 – 14:00	Lunch break
14:00 – 15:00	Poster Session I
	<i>Extraction of Illumination-Invariant Features in Face Recognition by Empirical Mode Decomposition</i> Zhang, Tang, Zhang
	<i>A Discriminant Analysis Method for Face Recognition in Heteroscedastic Distributions</i> Lei, Liao, Yi, Qin, Li
	<i>Robust Face Recognition Using Color Information</i> Liu, Liu
	<i>Practical On-line Signature Verification</i> Pascual-Gaspar, Vivaracho-Pascual, Cardeñoso-Payo

<i>Multi-Region Probabilistic Histograms for Robust and Scalable Identity Inference</i>	Sanderson, Lovell
<i>Face Age Classification on Consumer Images with Gabor Feature and Fuzzy LDA Method</i>	Gao, Ai
<i>The Big Brother database: evaluating face recognition in smart home environments</i>	Franco, Maio, Maltoni
<i>A Confidence-based Update Rule for Self-Updating Human Face Recognition Systems</i>	Pavani, Sukno, Butakoff, Planes, Frangi
<i>Multibiometric People Identification: A Self-Tuning Architecture</i>	Riccio, Nappi, De Marsico
<i>Face Gender Classification on Consumer Images in a Multiethnic Environment</i>	Gao, Ai
<i>Multi-View Face Alignment Using 3D Shape Model for View Estimation</i>	Su, Ai, Lao
<i>Template Update Methods in Adaptive Biometric Systems : A Critical Review</i>	Rattani, Freni, Marcialis, Roli
<i>Analysis of eigenvalue correction applied to biometrics</i>	Hendrikse, Veldhuis, Spreewers, Bazen
<i>On-line Signature Matching Based on Hilbert Scanning Patterns</i>	Ahrary, Chiang, Kamata
<i>Theoretical framework for constructing matching algorithms in biometric authentication systems</i>	Inuma, Otsuka, Imai
<i>Writer Identification of Chinese Handwriting Using Grid Microstructure Feature</i>	Li, Ding
<i>A Biometric Menagerie Index for Characterising Template/Model-specific Variation</i>	Poh, Kittler
<i>Data-Driven Impostor Selection for T-norm Score Normalisation and the Background Dataset in SVM-based Speaker Verification</i>	McLaren, Vogt, Baker, Sridharan
<i>Entropy of the Retina Template</i>	Arakala, Culpepper, Jeffers, Turpin, Boztas, Horadam
<i>Biometrics Method for Human Identification using Electrocardiogram</i>	Singh
<i>A first approach to Contact-Based Biometrics for User Authentication</i>	Vogiannou, Moustakas, Tzovaras, Strintzis
<i>Static models of derivative-coordinates phase spaces for multivariate time series classification: an application to signature verification</i>	Richiardi, Kryszczuk, Drygajlo
<i>Using Feature Selection in a Low Cost On-Line Signature Recognition System Based on Normalized Signatures and Fractional Distances</i>	Vivaracho-Pascual, Pascual-Gaspar, Cardeñoso-Payo
<i>Lips Recognition for Biometrics</i>	Choras
<i>Support Vector Machine Regression for Robust Speaker Verification in Mismatching and Forensic Conditions</i>	Mateos-Garcia, Ramos, Lopez-Moreno, Gonzalez-Rodriguez
<i>Feature Selection and Binarization for On-line Signature Recognition</i>	Maiorana, Campisi, Neri
<i>Automatic Cross-Biometric Footstep Database Labelling using Speaker Recognition</i>	Vera-Rodriguez, Mason, Evans
<i>Towards Structured Approaches to Arbitrary Data Selection and Performance Prediction for Speaker Recognition</i>	Lei
<i>An Usability Study of Continuous Biometrics</i>	Kwang, Sim, Yap, Ramnath

	<p><i>Scores Selection for Emotional Speaker Recognition</i> Shan, Yang</p> <p><i>Enhancement and Registration Schemes for Matching Conjunctival Vasculature</i> Crihalmeanu, Ross</p> <p>Demo Session I</p> <ul style="list-style-type: none"> • <i>Face Recognition for Smart Interactions</i> Hazim Kemal Ekenel, Mika Fischer, Hua Gao, Lorant Toth, Rainer Stiefelhagen interACT Research, Computer Science Department, Universität Karlsruhe (TH) Am Fasanengarten 5, 76131, Karlsruhe, Germany • <i>CaBSys: a Cardiac Biometry System based on frequency analysis of heart sounds</i> Francesco Beritelli and Andrea Spadaccini Dipartimento di Ingegneria Informatica e delle Telecomunicazioni, University of Catania, Italy • <i>Adaptive multimodal biometrics</i> Pravir Chawdhry, Lothar Breitenbach, Giuliano Pirelli, Rui Silva, Ioannis Vakalis Security Technologies Assessment Unit, Institute for the Protection and Security of the Citizen Joint Research Centre, I21027 Ispra (VA) Italy • <i>Demonstration of NICTA Mugshot Search System</i> Conrad Sanderson, Abbas Bigdeli, Brian C. Lovell NICTA, PO Box 6020, St Lucia, QLD 4067, Australia, http://www.nicta.com.au • <i>Tattoo-ID: Tattoo Image Matching for Victim and Suspect Identification</i> Jung-Eun Lee, Anil K. Jain and Rong Jin Michigan State University, Computer Science and Engineering, East Lansing, MI 48824, USA, http://biometrics.cse.msu.edu/
15:00 – 16:30	<p>Oral Session II (Voice) – Chair: Venu Govindnaraju</p> <p><i>Analysis of the Utility of Classical and Novel Speech Quality Measures for Speaker Verification</i> Harriero, Ramos, Gonzalez-Rodriguez, Fierrez</p> <p><i>Impact of prior channel information for speaker identification</i> Vaquero, Scheffer, Kajarekar</p> <p><i>Minimising Speaker Verification Utterance Length through Confidence Based Early Verification Decisions</i> Vogt, Sridharan</p> <p><i>Scatter Difference NAP for SVM Speaker Recognition</i> Baker, Vogt, McLaren, Sridharan</p>
16:30 – 17:00	Coffee Break
17:00 – 18:00	<p>Oral Session III (Face-2) – Chair: Josef Bigun</p> <p><i>Bayesian Face Recognition Based on Markov Random Field Modeling</i> Wang, Lei, Li, Ao</p> <p><i>Pixelwise local binary pattern models of faces using kernel density estimation</i> Ahonen, Pietikainen</p> <p><i>Improvements and Performance Evaluation Concerning Synthetic Age Progression and Face Recognition Affected by Adult Aging</i> Sethuram, Patterson, Ricanek Jr., Rawls</p>
18:00 – 19:00	Open session: IAPR Technical Committee on Biometrics - Plenary Meeting
19:30	Conference reception

Thursday, June 4th

09:00 – 10:00	Keynote speech – Chair: Javier Ortega-Garcia <i>40 years of progress in automatic speaker recognition technology</i> Sadaoki Furui Department of Computer Science, Tokyo Institute of Technology	
10:00 – 10:30	Coffee Break	
10:30 – 12:30	Oral Session IV (Fingerprint and Palmprint) – Chair: Jie Tian	
	<i>Beyond Minutiae: A Fingerprint Individuality Model with Pattern, Ridge and Pore Features</i>	Chen, Jain
	<i>Active Fingerprint Ridge Orientation Models</i>	Ram, Bischof, Birchbauer
	<i>FM Model Based Fingerprint Reconstruction from Minutiae Template</i>	Feng, Jain
	<i>Robust Biometric System using Palmprint for Personal Verification</i>	Srinivas, Gupta
	<i>Accurate Palmprint Recognition using Spatial Bags of Local Layered Descriptors</i>	Han, Tan, Sun
12:30 – 14:00	Lunch break	
14:00 – 15:30	Poster Session II	
	<i>Real-Time Model-Based Hand Localization for Unsupervised Palmar Image Acquisition</i>	Fratric, Ribaric
	<i>Nasal Region Contribution in 3D Face Biometrics Using Shape Analysis Framework</i>	Drira, Ben Amor, Daoudi, Srivastava
	<i>Direct Pore Matching for Fingerprint Recognition</i>	Zhao, Zhang, Zhao, Luo
	<i>A Novel Fingerprint Matching Algorithm Using Ridge Curvature Feature</i>	Li, Yang, Su, Zhang, Tian
	<i>Fingerprint Matching Based on Neighboring Information and Penalized Logistic Regression</i>	Cao, Yang, Tian, Zhang, Li, Tao, Tian
	<i>Heterogeneous Face Recognition from Local Structures of Normalized Appearance</i>	Liao, Yi, Lei, Qin, Li
	<i>Reference Point Detection for Arch Type Fingerprints</i>	Lam, Hou, Yau, Chen, Li, Sim
	<i>Sparse Representation for Video-based Face Recognition</i>	Naseem, Togneri, Bennamoun
	<i>Synthesizing Frontal Faces on Calibrated Stereo Cameras for Face Recognition</i>	Cheung, Chen, Moon
	<i>Face Image Quality Evaluation for ISO/IEC Standards 19794-5 and 29794-5</i>	Sang
	<i>Upper Facial Action Unit Recognition</i>	Zor, Windeatt
	<i>Automatic Partial Face Alignment in NIR Video Sequences</i>	Yang, Liao, Li
	<i>A Novel Region Based Liveness Detection Approach for Fingerprint Scanners</i>	DeCann, Tan, Schuckers
	<i>Palmprint Recognition based on Regional Rank Correlation of Directional Features</i>	Han, Sun, Tan, Hao
<i>Focal Point Detection Based on Half Concentric Lens Model for Singular Point Extraction in Fingerprint</i>	Areekul, Boonchaiseree	
<i>Kernel Principal Component Analysis of Gabor Features for Palmprint Recognition</i>	Aykut, Ekinci	
<i>A Classification Framework for Large-Scale Face Recognition Systems</i>	Zhou, Chindaro, Deravi	

	<i>Hand Vein Verification System based on SIFT matching</i>	Ladoux, Rosenberger, Dorizzi
	<i>Parts-Based Face Verification using Local Frequency Bands</i>	McCool, Marcel
	<i>Robust Fingerprint Matching Using Spiral Partitioning Scheme</i>	Shi, Govindaraju
	<i>Local Gabor Binary Pattern Whitened PCA: A Novel Approach for Face Recognition from Single Image per Person</i>	Nguyen, Bai, Shen
	<i>Performance and Computational Complexity Comparison of Block-based Fingerprint Enhancement</i>	Areekul, Jirachaweng, Leelasawassuk
	<i>On Decomposing an Unseen 3D Face into Neutral face and Expression Deformations</i>	Al-Osaimi, Bennamoun, Mian
	<i>A Model Based Approach for Expressions Invariant Face Recognition</i>	Riaz, Mayer
	<i>Face Recognition with LWIR Imagery using Local Binary Patterns</i>	Mendez, San Martin, Kittler, Plasencia, Garcia-Reyes
	<i>Palmprint Verification using Circular Gabor Filter</i>	Ghandehari, Safabakhsh
	<i>Nasal Region-based 3D Face Recognition Under Pose and Expression Variations</i>	Dibeklioglu, Gökberk, Akarun
	<i>An Analysis-by-Synthesis Method for Heterogeneous Face Biometrics</i>	Li, Wang, Yang, Yi
	<i>Why is Facial Occlusion a Challenging Problem?</i>	Ekenel, Stiefelhagen
	<i>Generic versus Salient Region-based Partitioning for Local Appearance Face Recognition</i>	Ekenel, Stiefelhagen
	Demo Session II	
	Oral Session V (Competitions) – Chair: Davide Maltoni	
	<i>Overview of the Multiple Biometric Grand Challenge</i>	Phillips, Scruggs, Flynn, Bowyer, Beveridge, Givens, Draper, O'Toole
	<i>Partial Face Matching between Near Infrared and Visual Images in MBGC Portal Challenge</i>	Yi, Liao, Lei, Sang, Li
15:30 – 17:00	<i>Face Video Competition at ICB2009</i>	Poh, Chan, Kittler
	<i>Fingerprint Verification Competition at ICB 2009</i>	Cappelli
	<i>On-line Signature Verification Competition at ICB 2009</i>	Dorizzi, Salicetti
	<i>Feature-based Multibiometric Fusion Competition</i>	Kryszczuk
17:00 – 17:30	Coffee Break	
	Oral Session VI (Face-3) – Chair: Bhagavatula Vijayakumar	
	<i>Binary Biometric Representation through Pairwise Polar Quantization</i>	Chen, Veldhuis
17:30 – 18:30	<i>Manifold Learning for Gender Classification from Face Sequences</i>	Hadid, Pietikäinen
	<i>A Random Network Ensemble for Face Recognition</i>	Choi, Toh, Byun
20:00	Conference banquet	

Friday, June 5th

09:00 – 10:00	<p>Keynote speech – Chair: Anil Jain <i>Lessons learned and challenges in large scale biometrics systems</i> Jean-Christophe Fondeur Sagem Sécurité, Paris, France</p>																																
10:00 – 10:30	<p>Coffee Break</p>																																
10:30 – 12:30	<p>Oral Session VII (Multibiometrics and Security) – Chair: Arun Ross</p> <table border="0"> <tr> <td data-bbox="264 528 1102 595"><i>Fusion in Multibiometric Identification Systems: What about the Missing Data?</i></td> <td data-bbox="1142 528 1437 555">Nandakumar, Jain, Ross</td> </tr> <tr> <td data-bbox="264 600 1043 667"><i>Challenges and Research Directions for Adaptive Biometric Recognition Systems</i></td> <td data-bbox="1142 600 1422 627">Poh, Wong, Kittler, Roli</td> </tr> <tr> <td data-bbox="264 672 1031 739"><i>Modelling FRR of Biometric Verification Systems using the Template Co-update Algorithm</i></td> <td data-bbox="1142 672 1401 698">Didaci, Marcialis, Roli</td> </tr> <tr> <td data-bbox="264 743 1066 779"><i>Bipartite Biotokens: Definition, Implementation, and Analysis</i></td> <td data-bbox="1142 743 1321 770">Scheirer, Boulton</td> </tr> <tr> <td data-bbox="264 801 1086 875"><i>Fusion of LSB and DWT Biometric Watermarking using Offline Handwritten Signature for Copyright Protection</i></td> <td data-bbox="1142 801 1329 828">Low, Teoh, Tee</td> </tr> <tr> <td data-bbox="264 880 1086 916"><i>Audio-Visual Identity Verification and Robustness to Imposture</i></td> <td data-bbox="1142 880 1517 907">Karam, Mokbel, Greige, Chollet</td> </tr> </table>	<i>Fusion in Multibiometric Identification Systems: What about the Missing Data?</i>	Nandakumar, Jain, Ross	<i>Challenges and Research Directions for Adaptive Biometric Recognition Systems</i>	Poh, Wong, Kittler, Roli	<i>Modelling FRR of Biometric Verification Systems using the Template Co-update Algorithm</i>	Didaci, Marcialis, Roli	<i>Bipartite Biotokens: Definition, Implementation, and Analysis</i>	Scheirer, Boulton	<i>Fusion of LSB and DWT Biometric Watermarking using Offline Handwritten Signature for Copyright Protection</i>	Low, Teoh, Tee	<i>Audio-Visual Identity Verification and Robustness to Imposture</i>	Karam, Mokbel, Greige, Chollet																				
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14:00 – 15:00	<p>Poster Session III</p> <table border="0"> <tr> <td data-bbox="264 1025 1126 1093"><i>Cancelable Biometrics with Perfect Secrecy for Correlation-based Matching</i></td> <td data-bbox="1142 1025 1358 1052">Hirata, Takahashi</td> </tr> <tr> <td data-bbox="264 1097 1107 1171"><i>Multilinear Tensor-Based Non-Parametric Dimension Reduction for Gait Recognition</i></td> <td data-bbox="1142 1097 1426 1124">Chen, Zhang, Fleischer</td> </tr> <tr> <td data-bbox="264 1176 1018 1243"><i>Simulating the Influences of Aging and Ocular Disease on Biometric Recognition Performance</i></td> <td data-bbox="1142 1176 1461 1202">Wolthusen, Borgen, Bours</td> </tr> <tr> <td data-bbox="264 1247 1082 1314"><i>Quantifying gait similarity: user authentication and real-world challenge</i></td> <td data-bbox="1142 1247 1469 1314">Bächlin, Schumm, Roggen, Tröster</td> </tr> <tr> <td data-bbox="264 1319 1070 1386"><i>Combining illumination normalization methods for better face recognition</i></td> <td data-bbox="1142 1319 1493 1346">Boom, Spreuwers, Veldhuis</td> </tr> <tr> <td data-bbox="264 1391 1050 1458"><i>An Information Theoretic Framework for Biometric Security Systems</i></td> <td data-bbox="1142 1391 1302 1417">Lai, Ho, Poor</td> </tr> <tr> <td data-bbox="264 1462 1075 1536"><i>Custom Design of JPEG Quantization Tables for Compressing Iris Polar Images to Improve Recognition Accuracy</i></td> <td data-bbox="1142 1462 1398 1489">Uhl, Konrad, Stögner</td> </tr> <tr> <td data-bbox="264 1541 991 1608"><i>Improving Compressed Iris Recognition Accuracy using JPEG2000 RoI Coding</i></td> <td data-bbox="1142 1541 1517 1608">Uhl, Hämmerle-Uhl, Prähauser, Starzacher</td> </tr> <tr> <td data-bbox="264 1612 1098 1680"><i>Security-enhanced Fuzzy Fingerprint Vault Based on Minutiae's Local Ridge Information</i></td> <td data-bbox="1142 1612 1430 1639">Li, Yang, Cao, Shi, Tian</td> </tr> <tr> <td data-bbox="264 1684 884 1720"><i>Constructing Passwords from Biometrical Data</i></td> <td data-bbox="1142 1684 1493 1711">Balakirsky, Vinck, Ghazaryan</td> </tr> <tr> <td data-bbox="264 1742 959 1778"><i>Efficient Biometric Verification in Encrypted Domain</i></td> <td data-bbox="1142 1742 1422 1809">Upmanyu, Namboodiri, Srinathan, Jawahar</td> </tr> <tr> <td data-bbox="264 1805 1126 1872"><i>Bayesian Networks to Combine Intensity and Color Information in Face Recognition</i></td> <td data-bbox="1142 1805 1334 1832">Heusch, Marcel</td> </tr> <tr> <td data-bbox="264 1877 783 1912"><i>NIR Face Based Biometric Key Binding</i></td> <td data-bbox="1142 1877 1214 1904">Ao, Li</td> </tr> <tr> <td data-bbox="264 1935 884 1971"><i>Image Averaging for Improved Iris Recognition</i></td> <td data-bbox="1142 1935 1493 1962">Hollingsworth, Bowyer, Flynn</td> </tr> <tr> <td data-bbox="264 1993 1086 2067"><i>Empirical Evidence for Correct Iris Match Score Degradation with Increased Time-Lapse Between Gallery and Probe Images</i></td> <td data-bbox="1142 1993 1398 2020">Baker, Bowyer, Flynn</td> </tr> <tr> <td data-bbox="264 2072 1062 2139"><i>Facial Comparisons by Subject Matter Experts: Their Role in Biometrics and Their Training</i></td> <td data-bbox="1142 2072 1222 2098">Spaun</td> </tr> </table>	<i>Cancelable Biometrics with Perfect Secrecy for Correlation-based Matching</i>	Hirata, Takahashi	<i>Multilinear Tensor-Based Non-Parametric Dimension Reduction for Gait Recognition</i>	Chen, Zhang, Fleischer	<i>Simulating the Influences of Aging and Ocular Disease on Biometric Recognition Performance</i>	Wolthusen, Borgen, Bours	<i>Quantifying gait similarity: user authentication and real-world challenge</i>	Bächlin, Schumm, Roggen, Tröster	<i>Combining illumination normalization methods for better face recognition</i>	Boom, Spreuwers, Veldhuis	<i>An Information Theoretic Framework for Biometric Security Systems</i>	Lai, Ho, Poor	<i>Custom Design of JPEG Quantization Tables for Compressing Iris Polar Images to Improve Recognition Accuracy</i>	Uhl, Konrad, Stögner	<i>Improving Compressed Iris Recognition Accuracy using JPEG2000 RoI Coding</i>	Uhl, Hämmerle-Uhl, Prähauser, Starzacher	<i>Security-enhanced Fuzzy Fingerprint Vault Based on Minutiae's Local Ridge Information</i>	Li, Yang, Cao, Shi, Tian	<i>Constructing Passwords from Biometrical Data</i>	Balakirsky, Vinck, Ghazaryan	<i>Efficient Biometric Verification in Encrypted Domain</i>	Upmanyu, Namboodiri, Srinathan, Jawahar	<i>Bayesian Networks to Combine Intensity and Color Information in Face Recognition</i>	Heusch, Marcel	<i>NIR Face Based Biometric Key Binding</i>	Ao, Li	<i>Image Averaging for Improved Iris Recognition</i>	Hollingsworth, Bowyer, Flynn	<i>Empirical Evidence for Correct Iris Match Score Degradation with Increased Time-Lapse Between Gallery and Probe Images</i>	Baker, Bowyer, Flynn	<i>Facial Comparisons by Subject Matter Experts: Their Role in Biometrics and Their Training</i>	Spaun
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	<i>Iris Recognition using 3D Co-occurrence Matrix</i>	Chen, Huang, Hsieh
	<i>A new Fake Iris Detection Method</i>	He, Lu
	<i>Latent Fingerprint Matching: Fusion of Rolled and Plain Fingerprints</i>	Feng, Yoon, Jain
	<i>Fuzzy 3D Face Ethnicity Categorization</i>	Zhong, Sun, Tan
	<i>Parallel Versus Serial Classifier Combination for Multibiometric Hand-based Identification</i>	Uhl, Wild
	<i>Systematic Construction of Iris-based Fuzzy Commitment Schemes</i>	Uhl, Rathgeb
	<i>Eyelid Localization in Iris Images Captured in Less Constrained Environment</i>	Liu, Li, Song
	<i>Faceprint: Fusion of Local features for 3D Face Recognition</i>	Zhang, Wang
	<i>Robust multi-modal and multi-unit feature level fusion of face and iris biometrics</i>	Rattani, Tistarelli
	<i>Robust Human Detection Under Occlusion by Integrating Face and Person Detectors</i>	Schwartz, Gopalan, Chellappa, Davis
	<i>A New Approach for Biometric Template Storage and Remote Authentication</i>	Sarier
	<i>Noisy Iris Verification: A Modified Version of Local Intensity Variation Method</i>	Tajbakhsh, Araabi, Soltanian-Zadeh
	<i>Combining Facial Skin Mark and Eigenfaces for Face Recognition</i>	Zhang, Tulyakov, Govindaraju
	<i>A Biometric Key-Binding and Template Protection Framework using Correlation Filters</i>	Boddeti, Su, Bhagavatula
	<i>An Automated Video-Based System For Iris Recognition</i>	Lee, Phillips, Micheals
	Demo Session III	
	Oral Session VIII (Gait) – Chair: Enrico Grosso	
15:00 – 16:30	<i>Covariate Analysis for View-point Independent Gait Recognition</i>	Bouchrika, Nixon, Carter, Goffredo
	<i>Dynamic Texture Based Gait Recognition</i>	Kellokumpu, Zhao, Li, Pietikäinen
	<i>Gender Recognition based on fusion of face and multi-view gait</i>	Zhang, Wang
	<i>Unsupervised Real-time Unusual Behavior Detection for Biometric-assisted Visual Surveillance</i>	Yu, Moon
16:30 – 17:00	Coffee Break	
	Oral Session IX (Iris) – Chair: Tieniu Tan	
17:00– 18:00	<i>Robust Biometric Key Extraction Based on Iris Cryptosystem</i>	Zhang, Sun, Tan, Hu
	<i>Iris Matching by Local Extremum Points of Multiscale Taylor Expansion</i>	Bastys, Kranauskas, Masiulis
	<i>Efficient Iris Spoof Detection via Boosted Local Binary Patterns</i>	He, Tan, Sun, Wei
	Closing session	