

Arslan Brömme, Christoph Busch,
Antitza Dantcheva, Christian Rathgeb, Andreas Uhl (Eds.)

BIOSIG 2017

**Proceedings of the 16th International Conference
of the Biometrics Special Interest Group**

**20.-22. September 2017 in
Darmstadt, Germany**

Gesellschaft für Informatik e.V. (GI)

Table of Contents

BIOSIG 2017 – Regular Research Papers	13
Gabriel Emile Hine, Emanuele Maiorana, Patrizio Campisi <i>Resting-state EEG: A Study on its non-Stationarity for Biometric Applications.....</i>	<i>15</i>
Aske R. Lejbølle, Kamal Nasrollahi, Benjamin Krogh, Thomas B. Moeslund <i>Multimodal Neural Network for Overhead Person Re-identification.....</i>	<i>25</i>
Nanang Susyanto <i>Pool Adjacent Violators Based Biometric Rank Level Fusion.....</i>	<i>35</i>
Christian Rathgeb, Christoph Busch <i>Improvement of Iris Recognition based on Iris-Code Bit-Error Pattern Analysis.....</i>	<i>41</i>
Ehsaneddin Jalilian, Andreas Uhl, Roland Kwitt <i>Domain Adaptation for CNN Based Iris Segmentation.....</i>	<i>51</i>
Pawel Drozdowski, Christian Rathgeb, Christoph Busch <i>SIC-Gen: A Synthetic Iris-Code Generator.....</i>	<i>61</i>
Johannes Merkle, Benjamin Tams, Benjamin Dieckmann, Ulrike Korte <i>xTARP: Improving the Tented Arch Reference Point Detection Algorithm.....</i>	<i>71</i>
Simon Kirchgasser, Andreas Uhl <i>Fingerprint Template Ageing vs. Template Changes Revisited.....</i>	<i>83</i>
Vanina Camacho, Guillermo Garella, Francesco Franzoni, Luis Di Martino, Guillermo Carbajal, Javier Preciozzi, Alicia Fernández <i>Recognizing infants and toddlers over an on-production fingerprint database.....</i>	<i>95</i>
Tarang Chugh, Sunpreet S. Arora, Anil K. Jain, Nicholas G. Paulter Jr. <i>Benchmarking Fingerprint Minutiae Extractors.....</i>	<i>105</i>
Luuk Spreeuwiers <i>De-duplication using automated face recognition: a mathematical model and all babies are equally cute.....</i>	<i>117</i>
Seong Tae Kim, Yeoreum Choi, Yong Man Ro <i>Multi-scale facial scanning via spatial LSTM for latent facial feature representation.....</i>	<i>127</i>
Mehmet Ozgur Turkoglu, Tugce Arican <i>Texture-Based Eyebrow Recognition.....</i>	<i>137</i>

Ulrich Scherhag, Andreas Nautsch, Christian Rathgeb, Marta Gomez-Barrero, Raymond N.J. Veldhuis, Luuk Spreeuwiers, Maikel Schils, Davide Maltoni, Patrick Grother, Sebastien Marcel, Ralph Breithaupt, Raghavendra Ramachandra, Christoph Busch <i>Biometric Systems under Morphing Attacks: Assessment of Morphing Techniques and Vulnerability Reporting</i>	149
Sushil Bhattacharjee, Sébastien Marcel <i>What you can't see can help you – extended-range imaging for 3D-mask presentation attack detection</i>	161
Héctor Delgado, Massimiliano Todisco, Nicholas Evans, Md Sahidullah, Wei Ming Liu, Federico Alegre, Tomi Kinnunen, Benoit Fauve <i>Impact of bandwidth and channel variation on presentation attack detection for speaker verification</i>	173
BIOSIG 2017 – Further Conference Contributions	185
André R. Gonçalves, Pavel Korshunov, Ricardo P.V. Violato, Flávio O. Simões, Sébastien Marcel <i>On the Generalization of Fused Systems in Voice Presentation Attack Detection</i>	187
Eduardo Ribeiro, Andreas Uhl <i>Exploring Texture Transfer Learning via Convolutional Neural Networks for Iris Super Resolution</i>	195
Patrick Schuch, Simon-Daniel Schulz, Christoph Busch <i>Intrinsic Limitations of Fingerprint Orientation Estimation</i>	203
Neamah Al-Naffakh, Nathan Clarke, Fudong Li, Paul Haskell-Dowland <i>Unobtrusive Gait Recognition using Smartwatches</i>	211
Attaullah Buriro, Sandeep Gupta, Bruno Crispo <i>Evaluation of Motion-based Touch-typing Biometrics in Online Financial Environments</i>	219
Emanuela Piciucco, Emanuele Maiorana, Owen Falzon, Kenneth P. Camilleri, Patrizio Campisi <i>Steady-State Visual Evoked Potentials for EEG-Based Biometric Identification</i>	227
Fernando Alonso-Fernandez, Reuben A. Farrugia, Josef Bigun <i>Improving Very Low-Resolution Iris Identification Via Super-Resolution Reconstruction of Local Patches</i>	235

Andreas Nautsch, Søren Trads Steen, Christoph Busch <i>Deep Quality-informed Score Normalization for Privacy-friendly Speaker Recognition in unconstrained Environments.....</i>	243
Francisco M. Castro, Manuel J. Marín-Jiménez, Nicolás Guil, Santiago López-Tapia, Nicolás Pérez de la Blanca <i>Evaluation of CNN architectures for gait recognition based on optical flow maps...</i>	251
Chris Zeinstra, Raymond Veldhuis, Luuk Spreeuwiers <i>How Random is a Classifier given its Area under Curve?.....</i>	259
Stepanka Barotova, Martin Drahansky <i>Fingerprint Damage Localizer and Detector of Skin Diseases from Fingerprint Images.....</i>	267
Pankaj Wasnik, Kirstina Schäfer, Kiran Raja, Raghavendra Ramachandra, Christoph Busch <i>Fusing Biometric Scores using Subjective Logic for Gait Recognition on Smartphone.....</i>	275