

2009 Symposium on Bio-inspired Learning and Intelligent Systems for Security

(BLISS 2009)

**Edinburgh, United Kingdom
20-21 August 2009**



IEEE Catalog Number: CFP0958C-PRT
ISBN: 978-1-4244-4633-9

**2009 Symposium on Bio-inspired
Learning and Intelligent Systems
for Security**

BLISS 2009

Table of Contents

Preface

Conference Organizers

Program Committee and Reviewers

Invited Talk 1

Invited Talk 2

Session 1: Biometrics

Fundamentals of Biometric System Design: New Course for Electrical, Computer, and Software Engineering Students	3
<i>Svetlana N. Yanushkevich and Anna V. Shmerko</i>	
Fingerprint - Iris Fusion Based Identification System Using a Single Hamming Distance Matcher	9
<i>Asim Baig, Ahmed Bouridane, Fatih Kurugollu, and Gang Qu</i>	
Experiments with Fingerprint Image Quality	13
<i>Martin Drahansky</i>	
Color Iris Recognition Using Hypercomplex Gabor Wavelets	18
<i>Fares S. Al-Qunaieer and Lahouari Ghouti</i>	
Color Iris Recognition Using Quaternion Phase Correlation	20
<i>Lahouari Ghouti and Fares S. Al-Qunaieer</i>	
Gait Recognition Using Shadow Analysis	26
<i>Yumi Iwashita and Adrian Stoica</i>	

Session 2 (Invited): Identity Detection and Verification Using Human Faces

Automating the Processes Involved in Facial Composite Production and Identification	35
<i>Charlie Frowd, Anna Petkovic, Kamran Nawaz, and Yasmeen Bashir</i>	
Commercial Face Recognition Doesn't Work	43
<i>Rob Jenkins and David White</i>	
Caricaturing to Improve Face Matching	49
<i>Peter J.B. Hancock, Alex H. McIntyre, and Josef Kittler</i>	
Finding and Discriminating Faces Using Biological Barcodes	50
<i>Steven C. Dakin and Roger J. Watt</i>	

Session 3 (Invited): Adaptive Learning Based on CHALC Pattern Recognition

Toward a HLAC-Based Histological Diagnosis System for Virtual-Slide Images	53
<i>Kenji Iwata, Yutaka Satoh, Takumi Kobayashi, Toshio Ueshiba, Katsuhiko Sakaue, Kôiti Hasida, Nobuyuki Otsu, Yoichi Kameda, Yohei Miyagi, Yuji Sakuma, Keiji Kikuchi, and Eiju Tsuchiya</i>	
Recognition of Dynamic Texture Patterns Using CHLAC Features	58
<i>Takumi Kobayashi, Tetsuya Higuchi, Tsuneharu Miyajima, and Nobuyuki Otsu</i>	
Histopathological Diagnostic Support Technology Using Higher-Order Local Autocorrelation Features	61
<i>Hirokazu Nosato, Hidenori Sakanashi, Masahiro Murakawa, Tetsuya Higuchi, Nobuyuki Otsu, Kensuke Terai, Nobuyuki Hiruta, and Noriaki Kameda</i>	
Anomalousness Detection for Surgery Videos Using CHLAC Feature	66
<i>Fumio Sakabe, Masahiro Murakawa, Takumi Kobayashi, Tetsuya Higuchi, and Nobuyuki Otsu</i>	

Session 4 (Invited): Secured Identities, Unclonable and Clone-Resistant Physical Entities

Architecturally-Enforced InfoSec in a General-Purpose Self-Configurable System	71
<i>Nicholas J. Macias and Peter M. Athanas</i>	
Mechatronic Security and Robot Authentication	77
<i>Wael Adi</i>	
Autonomous Physical Secret Functions and Clone-Resistant Identification	83
<i>Wael Adi</i>	

Session 5 (Invited): Approaches and Methods of Security Engineering

Characterization of a Voltage Glitch Attack Detector for Secure Devices	91
<i>Asier Goikoetxea Yanci, Stephen Pickles, and Tughrul Arslan</i>	
Research on Critical Infrastructures and Critical Information Infrastructures	97
<i>Feruzza Sattarova Yusufovna, Farkhod Alisherov Alisherovich, Minkyu Choi, Eun-suk Cho, Furkhat Tadjibayev Abdurashidovich, and Tai-hoon Kim</i>	
Crossed Crypto-Scheme in WPA PSK Mode	102
<i>Maricel O. Balitanas, Rosslin John Robles, Nayoun Kim, and Taihoon Kim</i>	
"Glitch Logic" and Applications to Computing and Information Security	107
<i>Adrian Stoica and Srinivas Katkoori</i>	
Ensuring Secure Healthcare Communications via ICmetric Based Encryption on Unseen Devices	113
<i>Evangelos Papoutsis, Gareth Howells, Andrew Hopkins, and Klaus McDonald-Maier</i>	

Session 6: Advanced Modeling and Signal Processing

Color Texture Retrieval Using Hypercomplex Wavelets	121
<i>Fahad S. Al-Qadda and Lahouari Ghouti</i>	
The Radiation Tolerance Problem: Analytical Modelling of Inter-Dependency of Parameters	127
<i>H.J. Kadim</i>	
A Method of Project Evaluation and Review Technique (PERT) Optimization by Means of Genetic Programming	132
<i>Daniel Howard</i>	

Author Index