

Proceedings



BLISS 2008

***2008 ECSIS Symposium
on Bio-inspired, Learning,
and Intelligent Systems for Security***

***4-6 August 2008
Edinburgh, United Kingdom***

Organized by

**European Center for Secure Information and Systems (ECSIS.EU)
The University of Edinburgh, United Kingdom**

Supported by

**European Center for Secure Information and Systems (ECSIS.EU)
Institute for System Level Integration, United Kingdom
Spiral Gateway Ltd., United Kingdom**

Hosted by

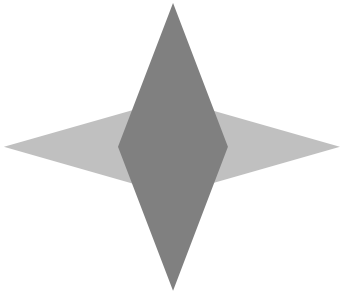
The University of Edinburgh, United Kingdom



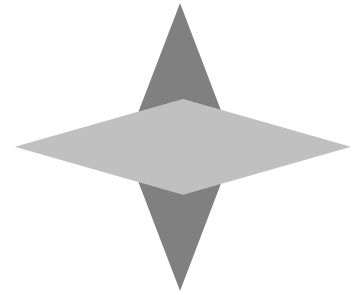
Los Alamitos, California

Washington • Tokyo





BLISS 2008



2008 ECSIS Symposium on Bio-inspired, Learning, and Intelligent Systems for Security

Table of Contents

Preface	vii
Conference Organizers	viii
Program Committee	ix

Paper Session

Effecting an Improvement to the Fitness Function. How to Evolve a More Identifiable Face	3
<i>Charlie Frowd, Joanne Park, Alex McIntyre, Vicki Bruce, Melanie Pitchford, Steve Fields, Mary Kenirons, and Peter J.B. Hancock</i>	
Biometric-Based Decision Support Assistance in Physical Access Control Systems	11
<i>S. Chague, B. Droit, O. Boulanov, S. N. Yanushkevich, V. P. Shmerko, and A. Stoica</i>	
Evaluating Biometric Encryption Key Generation Using Handwritten Signatures	17
<i>Sanaul Hoque, Michael Fairhurst, and Gareth Howells</i>	
CHLAC Approach to Flexible and Intelligent Vision Systems.....	23
<i>Nobuyuki Otsu</i>	
Development of Software for Real-Time Unusual Motions Detection by Using CHLAC	34
<i>Kenji Iwata, Yutaka Satoh, Katsuhiko Sakaue, Takumi Kobayashi, and Nobuyuki Otsu</i>	
HLAC Approach to Automatic Object Counting	40
<i>Takumi Kobayashi, Tadaaki Hosaka, Shu Mimura, Takashi Hayashi, and Nobuyuki Otsu</i>	
Object Detection by Selective Integration of HLAC Mask Features	46
<i>Akinori Hidaka, Takio Kurita, and Nobuyuki Otsu</i>	
Motion Recognition by Higher Order Local Auto Correlation Features of Motion History Images	51
<i>Kenji Watanabe and Takio Kurita</i>	
The Cow Gait Recognition Using CHLAC.....	56
<i>Shu Mimura, Keichi Itoh, Takumi Kobayashi, Tomohiro Takigawa, Atsushi Tajima, Atsushi Sawamura, and Nobuyuki Otsu</i>	
Using a Cognitive Architecture to Automate Cyberdefense Reasoning	58
<i>David Paul Benjamin, Partha Pal, Franklin Webber, Paul Rubel, and Mike Atigetchi</i>	

Network Intrusion Detection by Using Cellular Neural Network with Tabu Search	64
<i>Zhongxue Yang, Adem Karahoca, Ning Yang, and Nizamettin Aydin</i>	
Fuzzy Vault Fingerprint Smartcard Implementation Using an Orientation-Based Feature Vector	69
<i>K. Harmer, W. Sheng, G. Howells, M. Fairhurst, and Farzin Deravi</i>	
Detecting Voltage Glitch Attacks on Secure Devices	75
<i>Asier Goikoetxea Yanci, Stephen Pickles, and Tughrul Arslan</i>	
Towards Embedded Artificial Intelligence Based Security for Computer Systems.....	81
<i>A.B.T. Hopkins, P. Sartain, K.D. McDonald-Maier, and W.G.J. Howells</i>	
Effects of Feature Trimming on Encryption Key Stability for an ICmetric System.....	87
<i>Evangelos Papoutsis, Gareth Howells, Andrew Hopkins, and Klaus McDonald-Maier</i>	
Tamper Protection for Security Devices	92
<i>Philip Paul, Simon Moore, and Simon Tam</i>	
Analytical Modelling: An Investigation into the Use of Smart Biosensors as Stealth Countermeasures....	97
<i>HJ Kadim</i>	
Partially Observable Markov Decision Process for Transmitter Power Control in Wireless Sensor Networks	101
<i>Adrian Udenze and Klaus McDonald-Maier</i>	
High-Level Functional Architecture for Sensor Management System	107
<i>Isabella Panella</i>	
Artificial Intelligence Methodologies Applicable to Support the Decision-Making Capability on Board Unmanned Aerial Vehicles.....	111
<i>Isabella Panella</i>	
WLAN for Earth Observation Satellite Formations in LEO	119
<i>Tanya Vladimirova and Kawsu Sidibeh</i>	
Towards Recognition of Humans and their Behaviors from Space and Airborne Platforms: Extracting the Information in the Dynamics of Human Shadows.....	125
<i>Adrian Stoica</i>	
Stochastic Interpolation: A Probabilistic View	129
<i>Joseph Kolibal and Daniel Howard</i>	
A Securable Autonomous Generalised Document Model (SAGENT).....	136
<i>Gareth Howells, Hossam Selim, Michael Fairhurst, Farzin Deravi, and Sanaul Hoque</i>	
Granular Association Analysis	142
<i>Yun Shen and Trevor Martin</i>	
Clone-Resistant DNA-Like Secured Dynamic Identity.....	148
<i>Wael Adi</i>	
The Re-emission Side Channel	154
<i>Andrew Burnside, Ahmet Erdogan, and Tughrul Arslan</i>	
Author Index.....	160