BLISS 2007
2007 ECSIS Symposium
on Bio-inspired, Learning,
and Intelligent Systems for Security

Table of Contents

Preface ...................................................................................................................................................... viii
Conference Organizers .............................................................................................................................. ix
Program Committee .................................................................................................................................... x
Keynote Speakers ...................................................................................................................................... xi

Session A: Biometrics
Chair: Ahmed Bouridane, Co-chair: Erfu Yang

Evolving the Face of a Criminal: How to Search a Face Space More Effectively ........................................ 3
Charlie D. Frowd, Vicki Bruce, Carol Gannon, Mark Robinson, Colin Tredoux, Jo Park, Alex McIntyre, and Peter J. B. Hancock

Accelerating Decision Making Support in Biometric Assistant for Remote Temperature Measures ............................................................... 11
V. P. Shmerko, S. N. Yanushkevich, H. Moon, A. Stoica, and R. R. Yager

Maximum-Likelihood Watermarking Detection on Fingerprint Images ....................................................... 15
Khalil Zebbiche, Fouad Khelifi, and Ahmed Bouridane

Sinusoidal Shape of a Papillary Line Crosscut ........................................................................................... 19
Martin Drahansky

Session B (Invited): Cyber Security
Organizer and Chair: Tai-hoon Kim, Co-chair: Daniel Howard

Block Model Application for Decision Support Systems ............................................................................. 25
Tai-hoon Kim, Seok-soo Kim, and Gil-cheol Park

Flexible Key Distribution for SCADA Network Using Multi-agent System .................................................. 29
Hak-Man Kim, Dong-Joo Kang, and Tai-Hoon Kim

Multi-receiver Certificate-Based Encryption and Application to Public Key Broadcast Encryption ................................................................................. 35
Chul Sur, Chae Duk Jung, and Kyung Hyune Rhee
Authenticated On-demand Ad Hoc Routing Protocol without Pre-shared Key Distribution

Youngho Park, Won-Young Lee, and Kyung-Hyune Rhee

Frameworks of Indexing Mechanism for Mobile Devices

Haeng-kon Kim

An Approach to Optimize Local Trust Algorithm in SureMsg Service

Wenmao Zhang, Jun Bi, Jianping Wu, and Zheng Qin

A Practical Proxy Device for Protecting RFID Tag’s Identifier

Sang-Soo Yeo, Kouichi Sakurai, and Jin Kwak

SecureGo: A Hardware-Software Co-protection against Identity Theft in Online Transaction

Kun Lin, Lin Yuan, and Gang Qu

Session C: Sensor Networks

Chair: Tanya Vladimirova, Co-chair: Nizamettin Aydin

An Intelligent Decision-Making System for Flood Monitoring from Space

Siti Yuhaniz, Tanya Vladimirova, and Scott Gleason

Multi-objective Evolutionary Optimizations of a Space-Based Reconfigurable Sensor Network under Hard Constraints

Erfu Yang, Ahmet T. Erdogan, Tughrul Arslan, and Nick Barton

An Improved Particle Swarm Optimization Algorithm for Power-Efficient Wireless Sensor Networks

Erfu Yang, Ahmet T. Erdogan, Tughrul Arslan, and Nick Barton

Session D: Adaptive Techniques for Security

Chair: Klaus McDonald-Maier, Co-chair: Jim Torresen

An Adaptive Processing Node Architecture for Validating Sensors Reliability in a Wind Farm

Nikolaos Bartzoudis and Klaus McDonald-Maier

Making Hardware Soft in Intelligent Systems

Jim Torresen and Kyrre Glette

Modelling of Anticipatory Behaviour for Self-Control and Adaptability with Applications to Autonomous Systems

H. J. Kadim

Session E: Image and Signal Processing Techniques

Chair: Gareth Howells, Co-chair: Lukas Sekanina

Image Analysis by Means of the Stochastic Matrix Method of Function Recovery

Daniel Howard and Joseph Kolibal

Processing Bank Checks with Genetic Programming and Histograms

Oana Muntean and Mihai Oltean
Session F: Emerging Areas in Security Research
Chair: HJ Kadim, Co-chair: Mircea Negoita

Bio-inspired Electronic-Mutation with Genetic Properties for Secured Identification
Wael Adi and Bassel Soudan

i²S³ the Integrated Intelligent Secure Sensor Systems Project

On Some Directions in Security-Oriented Research
Lukáš Sekanina, Tomáš Hruška, Tomáš Vojnar, Dušan Kolář, and Jan Černocký

Artificial Immune Systems – An Emergent Technology Performing the Defence of Complex Systems
Mircea Gh. Negoita

Session G: Biological, Chemical, and Medical Applications
Chair: Didier Keymeulen, Co-chair: Sue Ellen Haupt

Sue Ellen Haupt, Randy L. Haupt, and George S. Young

Prediction of Protein Conformation with Potential Applications to Medical Diagnosis and Defence
H. J. Kadim and C. M. Wood

Data Mining Usage in Emboli Detection
Adem Karahoca, Turkalp Kucur, and Nizamettin Aydin

Author Index