

2010 Sixth International Conference on Information Assurance and Security

(IAS 2010)

**Atlanta, Georgia, USA
23 – 25 August 2010**



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Program

Time	324	433	Foyer Area
Monday, August 23			
10:50		P1: <i>Plenary Session 1: Kwok-L. Tsui</i>	
11:30		P2: <i>Plenary Session 2: Václav Snášel</i>	
12:30		P3: <i>Plenary Session 3: Amy Neustein</i>	
13:00			
14:00	SSA: <i>Secure System Architectures</i>	ID: <i>Intrusion Detection</i>	PP: <i>Poster Presentation</i>
15:00			
15:30			
Tuesday, August 24			
09:00	SPEDA 2010: <i>Security and Performance in Emerging Distributed Architectures (SPEDA2010)</i>		
11:15	AIS: <i>Authentication and Identity</i>		
14:00	MS: <i>Multimedia Security</i>		
16:15	ITCTS: <i>International Workshop on Intelligent Technologies for Counter Terrorism and Security</i>		

Monday, August 23

10:50 - 11:30

P1: Plenary Session 1: Kwok-L. Tsui

Recent Research in System Informatics, Prognostics, and Health Management

Due to (i) concerns in public health safety, product reliability, system safety and failure prevention, and (ii) latest advancement in data collection technologies and modelling tools, there are tremendous opportunities in quantitative modelling research in system informatics (SI) as well as system prognostics and health management (PHM). First, we will present our view on research in system informatics, including data mining, surveillance, simulation, and system integration in healthcare and public health applications. In health surveillance, we will review and classify the various types of health surveillance research problems. In simulation, we review the latest research in disease spread simulation models and hospital operation simulation models. In system integration, we explore the opportunities for integrating surveillance, simulation, diagnostics, prognostics, data mining, and bioinformatics for personalized health management. Second, we will then discuss the recent research in system prognostics and health management and how they are connected to research in system informatics and human health management. In particular, we will explain the characteristics of PHM and how they are different from traditional reliability modelling research.

11:30 - 12:00

P2: Plenary Session 2: Václav Snášel

12:30 - 13:00

P3: Plenary Session 3: Amy Neustein

Sequence Package Analysis: A New Speaker Biometric for Performing Speaker Verification of Terror Suspects in Stressed Environments

Sequence Package Analysis (SPA) identifies another kind of speaker trait: the unique conversational sequence patterns that are associated with each speaker. In stressed environments where extraction features, acoustic vectors, and classifications, and other classical speaker biometric features are compromised by noisy texts, which include speakers who deliberately alter their voices when colluding on crimes and terrorist acts, SPA finds the speaker traits which are not obscured by such conditions. What this means is that when there is a mismatch, a non match or a low confidence match between a suspect's normal speech sample and the speech sample obtained by law enforcement during a high stressed situation (for example, the unidentified speaker is making a threat and is naturally agitated) SPA identifies the conversational sequence patterns that remain constant and identifiable notwithstanding the stressed environment. As such, SPA may be seen as a complementary biometric measure to improve accuracy of speaker verification in stressed environments. For

13:00 - 18:00

PP: Poster Presentation

A Comparison of the Standardized Versions of ECIES

Victor Gayoso (Spanish National Research Council (CSIC), Spain); Fernando Hernandez (Spanish National Research Council (CSIC), Spain); Luis Hernandez (Spanish National Research Council (CSIC), Spain); Carmen Sanchez (Polytechnic University of Madrid, Spain)

pp. 1-4

Discriminative Multinomial Naïve Bayes for Network Intrusion Detection

Mrutyunjaya Panda (Gandhi Institute of Engineering and Technology, Gunupur, India); Ajith Abraham (Machine Intelligence Research Labs (MIR Labs), USA); Manas Patra (Berhampur University, India)

pp. 5-10

Secure Universal Plug and Play Network

Vesa Pehkonen (VTT Technical Research Centre of Finland, Finland); Juha Koivisto (VTT, Finland)

pp. 11-14

A Case Analysis of a Contextual Model Of Trust for Digital Identities Using UML 2.0 and Context Graph Algorithms

Sean Thorpe (University of Technology, Jamaica)

pp. 15-20

Safeguarding Malaysia's Critical National Information Infrastructure (CNII) Against Cyber Terrorism: Towards Development of a Policy Framework

Zahri Yunos (CyberSecurity Malaysia, Malaysia); Syahrul Hafidz Suid (CyberSecurity Malaysia, Malaysia)

pp. 21-27

The Five Modes AES Applications in Sounds and Images

Chien-Lun Yen (National Taiwan Normal University, Taiwan)

pp. 28-31

Specification of Attribute Relations for Access Control Policies and Constraints Using Policy Machine

Vincent Hu (NIST, USA)

pp. 32-35

A Hybrid Authentication and Authorization Process for Control System Networks

David Manz (Pacific Northwest National Laboratory, USA); Thomas Edgar (Pacific Northwest National Laboratory, USA); Glenn Allen Fink (Virginia Polytechnic and State University, USA)

pp. 36-39

Security Preferences Specification and Implementation in a Service-Based Workflow

Wendpanga Francis Ouedraogo (INSA - Lyon, France); Frederique Biennier (INSA-Lyon, France); Nicolas Salatge (eBM Websourcing, France)

pp. 40-43

Resource-Efficient Implementation of BLUE MIDNIGHT WISH-256 Hash Function on Xilinx FPGA Platform

Mohamed Aly (UMASS Lowell university, USA); Martin Margala (University of Rochester, USA); Danilo Gligoroski (Norwegian University of Science and Technology, Norway)

pp. 44-47

Novel Technique for Steganography in Fingerprints Images: Design and Implementation

Hanan Mahmoud (Center of Excellence in Information Assurance,, Saudi Arabia)

pp. 48-51

Novel Algorithmic Countermeasures for Differential Power Analysis Attacks on Smart Cards

Hanan Mahmoud (Center of Excellence in Information Assurance,, Saudi Arabia)

pp. 52-55

14:00 - 17:00

Insider Threat Discovery Using Automatic Detection of Mission Critical Data Based On Content

Jonathan White (University of Arkansas, USA); Brajendra Panda (University of Arkansas, USA)
pp. 56-61

Benchmarking IP Blacklists For Financial Botnet Detection

David Oro (Barcelona Digital Technology Centre, Spain); Jesus Luna (Barcelona Digital CT, Spain);
Serna Jetzabel (Technical University of Catalonia, Spain); Felguera Toni (Barcelona Digital CT,
Spain); Vilanova Marc (La Caixa, Spain)
pp. 62-67

Using Vulnerability Information and Attack Graphs for Intrusion Detection

Sebastian Roschke (Hasso-Plattner-Institute, University of Potsdam, Germany); Feng Cheng
(University of Potsdam, Germany); Christoph Meinel (Hasso-Plattner-Institut für
Softwaresystemtechnik GmbH, Germany)
pp. 68-73

Detect Multi-Hop Stepping-Stone Pairs with Clock Skew

Ying-Wei Kuo (University of Houston, USA); Stephen Huang (University of Houston, USA)
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Efficient Defense Strategies to Minimize Attackers' Success Probabilities in Honeynet

Frank Yeong-Sung Lin (National Taiwan University, Taiwan); Yu-Shun Wang (National Taiwan
University, Taiwan); Po-Hao Tsang (National Taiwan University, Taiwan)
pp. 80-85

Scaling IDS Construction Based on Non-Negative Matrix Factorization Using GPU Computing

Jan Platos (VSB-Technical University of Ostrava, FEECS, Czech Republic); Pavel Kromer (VSB-
Technical University of Ostrava, FEECS, Czech Republic); Vaclav Snasel (VSB-Technical
University of Ostrava, FEECS, Czech Republic); Ajith Abraham (Machine Intelligence Research
Labs (MIR Labs), USA)
pp. 86-91

A Structured Approach to Anomaly Detection for In-Vehicle Networks

Michael Müter (Daimler AG, Germany); André Groll (University of Siegen, Germany); Felix C
Freiling (University of Mannheim, Germany)
pp. 92-98

Intelligent Response System to Mitigate the Success Likelihood of Ongoing Attacks

Wael Kanoun (Bell Labs, France); Nora Cuppens-Boulahia (IT TELECOM Bretagne, France);
Frédéric Cuppens (TELECOM Bretagne, France); Samuel Dubus (Bell Labs, France); Antony
Martin (Bell Labs, France)
pp. 99-105

Fast Intrusion Detection System Based on Flexible Neural Tree

Tomas Novosad (VSB-Technical University of Ostrava, FEECS, Czech Republic); Jan Platos (VSB-
Technical University of Ostrava, FEECS, Czech Republic); Vaclav Snasel (VSB-Technical
University of Ostrava, FEECS, Czech Republic); Ajith Abraham (Machine Intelligence Research
Labs (MIR Labs), USA)
pp. 106-111

Towards Intrusion Detection by Information Retrieval and Genetic Programming

Pavel Kromer (VSB-Technical University of Ostrava, FEECS, Czech Republic); Jan Platos (VSB-
Technical University of Ostrava, FEECS, Czech Republic); Vaclav Snasel (VSB-Technical
University of Ostrava, FEECS, Czech Republic); Ajith Abraham (Machine Intelligence Research
Labs (MIR Labs), USA)
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RAPID: Reputation Based Approach for Improving Intrusion Detection Effectiveness

Ashley Thomas (Secureworks Inc, USA)
pp. 118-124

Detecting Memory Spoofing in Secure Embedded Systems Using Cache-Aware FPGA Guards

Eugen Leontie (George Washington University, USA); Olga Gelbart (The George Washington

University, USA); Bhagirath Narahari (The George Washington University, USA); Rahul Simha (George Washington University, USA)
pp. 125-130

Secure Architecture for Healthcare Wireless Sensor Networks

Kalyani Divi (University of Massachusetts Dartmouth, USA); Mohammed Raza Kanjee (University of Massachusetts Dartmouth, Canada); Hong Liu (University of Massachusetts Dartmouth, USA)
pp. 131-136

End-to-End Security Policy Description and Management for Collaborative System

Ziyi Su (INSA-Lyon, France); Frederique Biennier (INSA-Lyon, France)
pp. 137-142

A Causal Model for Information Security Risk Assessment

Suleyman Kondakci (Izmir University of Economics, Turkey)
pp. 143-148

Threat Modeling Approaches and Tools for Securing Architectural Designs of an E-Banking Application

Caroline Moeckel (London South Bank University, United Kingdom); Ali E. Abdallah (London South Bank University, United Kingdom)
pp. 149-154

Two Tier Detection Model for Misbehavior of Low-Power Nodes in Virtual MIMO Based Wireless Networks

Yang Liu (Shanghai Jiao Tong University, P.R. China); Yue Wu (Shanghai Jiaotong University, P.R. China); Junhua Tang (Shanghai Jiao Tong University, P.R. China)
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15:00 - 15:45

C: Cryptography

The Number of the Isomorphism Classes of Hyperelliptic Curves of Genus Four Over Finite Fields

Lin You (Hangzhou Dianzi University, China, USA)
pp. 161-166

Fault Attack on AES with Single-Bit Induced Faults

Alessandro Barenghi (Politecnico di Milano, Italy); Guido Bertoni (ST Microelectronics, Italy); Luca Breveglieri (Politecnico di Milano, Italy); Mauro Pelliciodi (Politecnico di Milano, Italy); Gerardo Pelosi (Politecnico di Milano, Italy)
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15:30 - 16:30

AUP: Anonymity and User Privacy

Anonymous Service Access for Vehicular Ad Hoc Networks

Hesiri Weerasinghe (Oakland University, USA); Huirong Fu (Oakland University, USA); Supeng Leng (University of Electronic Science and Technology of China, P.R. China)
pp. 173-178

Patient's Perception of Health Information Security: The Case of Selected Public and Private Hospitals in Addis Ababa

Tibebe Tesema (Addis Ababa University, Ethiopia); Ajith Abraham (Machine Intelligence Research Labs (MIR Labs), USA); Dawn Medlin (Appalachian State University, USA)
pp. 179-184

A Framework for Integrated Risk Management Process Using Survival Analysis Approach in Information Security

Ganthan Narayana Samy (Universiti Teknologi Malaysia (UTM), Malaysia); Rabiah Ahmad (Universiti Teknologi Malaysia, Malaysia); Zuraini Ismail (University Teknologi Malaysia, Malaysia)
pp. 185-190

Extending the Definition of Guesswork

Reine Lundin (Karlstad University, Sweden); Stefan Lindskog (Karlstad University, Sweden)
pp. 191-196

Reconciling IHE-ATNA Profile with a Posteriori Contextual Access and Usage Control Policy in Healthcare Environment

Hanieh Azkia (IT-Telecom Bretagne, France); Nora Cuppens-Bouahia (IT TELECOM Bretagne, France); Frédéric Cuppens (TELECOM Bretagne, France); Gouenou Coatrieux (INSTITUT TELECOM - TELECOM Bretagne, France)

pp. 197-203

Inconsistency Detection Method for Access Control Policies

Riaz Ahmed Shaikh (Université du Québec en Outaouais (UQO), Canada); Kamel Adi (University of Quebec in Outaouais, Canada); Luigi Logrippo (Université de Québec à l'Outaouais, Canada); Serge Mankovski (CA Inc, Canada)

pp. 204-209

Anonymous Communication System Using Probabilistic Choice of Actions and Multiple Loopbacks

Kazuhiro Kono (Kansai University, Japan); Yoshimichi Ito (Osaka University, Japan); Noboru Babaguchi (Osaka University, Japan)

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Assurance in Identity Management Systems

Maya Chehab (E-Security Research Centre, United Kingdom); Ali E. Abdallah (London South Bank University, United Kingdom)

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Tuesday, August 24

09:00 - 11:00

SPEDA 2010: Security and Performance in Emerging Distributed Architectures (SPEDA2010)

Audited Credential Delegation - A User-Centric Identity Management Solution for Computational Grid Environments

Ali Nasrat Haidar (University College London, United Kingdom); Stefan Zasada (University College London, United Kingdom); Ali E. Abdallah (London South Bank University, United Kingdom); Bruce Beckles (University of Cambridge Computing Service, United Kingdom); Peter Coveney (University College London, United Kingdom)

pp. 222-227

Cooperative Access Control for the Grid

Alessio Merlo (University of Genoa, Italy); Alessandro Armando (University of Genoa, Italy)

pp. 228-233

CARMA: Composable-Adaptive Resource Management Authorization for Ubiquitous Environments

Roberto Morales (Universitat Politècnica de Catalunya, Spain); Serna Jetzabel (Technical University of Catalonia, Spain); Manel Medina (Technical University of Catalonia, Spain); Jesus Luna (Barcelona Digital CT, Spain)

pp. 234-239

A Semantic Based Methodology to Classify and Protect Sensitive Data in Medical Records

Valentina Casola (Università degli Studi di Napoli "Federico II", Italy); Flora Amato (Università degli Studi di Napoli Federico II, Italy); Antonino Mazzeo (Università degli Studi di Napoli Federico II, Italy); Sara Romano (Università degli Studi di Napoli "Federico II", Italy)

pp. 240-246

A Naming System Applied to a RESERVOIR Cloud

Antonio Celesti (University of Messina, Italy); Massimo Villari (University of Messina, Italy); Antonio Puliafito (University of Messina, Italy)

pp. 247-252

Identity Federation in Cloud Computing

Massimiliano Rak (Second University of Naples, Italy); Valentina Casola (Università degli Studi di Napoli "Federico II", Italy); Umberto Villano (University of Sannio, Italy)

pp. 253-259

Securing a Tiered Re-Taskable Sensing System

Alessandra De Benedictis (University of Naples Federico II, Italy); Andrea Gaglione (University of Naples Federico II, Italy); Nicola Mazzocca (University of Naples "Federico II", Italy)

Integrating a Network IDS Into an Open Source Cloud Computing Environment

Claudio Mazzariello (Federico II University of Napoli, Italy); Roberto Bifulco (University of Napoli Federico II, Italy); Roberto Canonico (University of Napoli Federico II, Italy)

11:15 - 13:00

AIS: Authentication and Identity

A Two-Tiered Authentication and Encryption Scheme in Secure Healthcare Sensor Networks

Mohammed Raza Kanjee (University of Massachusetts Dartmouth, Canada); Kalyani Divi (University of Massachusetts Dartmouth, USA); Hong Liu (University of Massachusetts Dartmouth, USA)

UDT -Authentication Option Field: an Approach

Danilo Bernardo (University of Technology, Australia)

Data Aggregation for Information Authentication in VANETs

Jezabel Molina-Gil (University of La Laguna, Spain); Pino Caballero-Gil (University of La Laguna, Spain); Candelaria Hernández-Goya (University of La Laguna, Spain); Cándido Caballero-Gil (University of La Laguna, Spain)

Secure Protocol for Ad Hoc Transportation System

Johnson Thomas (Oklahoma State University, USA); Matthew Thomas (, ?)

A Hierarchical Access Authentication in Network

He Liu (University of BJTU, P.R. China); Mangui Liang (Beijing Jiaotong University, P.R. China); Liang Qi (University of Beijing Jiaotong, P.R. China); Wei Chen (University of Beijing Jiaotong, P.R. China)

Quantifying Authentication Levels of Assurance in Grid Environments

Li Yao (University of Manchester, United Kingdom); Ning Zhang (University of Manchester, United Kingdom)

A Distributed and Cooperative User Authentication Framework

Chris Hocking (University of Plymouth, United Kingdom); Steven Furnell (University of Plymouth, United Kingdom); Nathan Clarke (University of Plymouth, United Kingdom); Paul Reynolds (University of Plymouth, United Kingdom)

14:00 - 15:00

MS: Multimedia Security

Optimum Fusion of Visual and Thermal Face Images for Recognition

Mrinal Kanti Bhowmik (Tripura University (A Central University), India)

Automatic Semantic Annotation of Images Based on Web Data

Guiguang Ding (University of Tsinghua, P.R. China)

Comparison of Real-Time DSP-Based Edge Detection Techniques for License Plate Detection

Zuwena Musoromy (University of Hertfordshire, United Kingdom); Faycal Bensaali (University of Hertfordshire, United Kingdom); Soodamani Ramalingam (University of Hertfordshire, United Kingdom); Georgios Pissanidis (University of Hertfordshire, United Kingdom)

Integrated Security Risk Management for IT-Intensive Organizations

Jeffrey Mounzer (Stanford University, USA); Tansu Alpcan (Technical University Berlin, Germany);
Nicholas Bambos (Stanford University, USA)
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Link Suggestions in Terrorists Networks Using Semi Discrete Decomposition

Vaclav Snasel (VSB-Technical University of Ostrava, FEECS, Czech Republic); Zdenek Horak
(VSB Technical University Ostrava, Czech Republic, Czech Republic); Ajith Abraham (Machine
Intelligence Research Labs (MIR Labs), USA)
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Fuzzified Aho-Corasick Search Automata

Zdenek Horak (VSB Technical University Ostrava, Czech Republic, Czech Republic); Vaclav
Snasel (VSB-Technical University of Ostrava, FEECS, Czech Republic); Ajith Abraham (Machine
Intelligence Research Labs (MIR Labs), USA); Aboul Ella Otifey Hassanien (University of Cairo,
Egypt)
pp. 338-342

***A Framework for Cyber Surveillance of Unlawful Activities for Critical Infrastructure Using
Computational Grids***

Vaclav Snasel (VSB-Technical University of Ostrava, FEECS, Czech Republic); Ajith Abraham
(Machine Intelligence Research Labs (MIR Labs), USA); Khalid Saeed (Bialystok Technical
University, Poland); Hameed Al-Qaheri (Kuwait university, Kuwait)
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