2015 10th International Conference for Internet Technology and Secured Transactions (ICITST 2015)

London, United Kingdom 14 – 16 December 2015



IEEE Catalog Number: ISBN:

CFP1581I-POD 978-1-4673-8337-0

Copyright © 2015, Infonomics Society All Rights Reserved

***This publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.

CFP1581I-POD IEEE Catalog Number: CFP15811-POD 978-1-4673-8337-0 ISBN (Print-On-Demand): ISBN (Online): 978-1-9083-2052-0

Additional Copies of This Publication Are Available From:

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400

Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com www.proceedings.com



Contents Page

Welcome Message....3

Contents Page....4

Executive Committees....10

Technical Programme Committees....11

Keynote Speakers

ICITST Honorary Chair and Distinguished Keynote Speaker: Professor Kevin Warwick....15

Keynote Speaker 1: Professor Frank Z. Wang....16

Keynote Speaker 2: Dr Martin Visser....17

Keynote Speaker 3: Dr Aspen Olmsted....19

Keynote Speaker 4: Professor Frank Geels....20

Keynote Speaker 5: Professor Maryline Chetto....21

PhD and Doctorate Consortium22

(Organiser: Charles A. Shoniregun)

Workshops

Workshop 1: Chaos-Information Hiding and Security (C-IHS-2015)....25

(Organisers: Safwan El Assad and Charles Shoniregun)

Benchmarking of Traditional Cryptographic Algorithms and Chaos-based Algorithms with DNA Operations....26 (Authors: Mirko Koscina, Daniel Caragata)

Hash Function based on Efficient Chaotic Neural Network....32

(Authors: Nabil Abdoun, Safwan El Assady, Mohammad Abu Tahay, Rima Assaf, Olivier Deforgesz, Mohamad Khalil)

A Novel Chaotic Generator Based On Weakly-coupled Discrete Skewtent Maps....38 (Authors: Ons Jallouli, Safwan El Assad, Maryline Chettoy, René Loziz, Daniel Caragata)

Chaos-based Cryptosystems using Dependent Diffusion: An Overview....44 (Authors: Mohammed AbuTaha, Safwan El Assad, Mousa Farajallah, Audrey Queudety, Olivier Deforge)

The 10th International Conference for Internet Technology and Secured Transactions (ICITST-2015)

Workshop 2: Cloud Applications and Security (CAS'15)

(Organisers: Ella Pereira, Michael Mackay)

A Proposed Framework For Proactive Vulnerability Assessments in Cloud Deployments....51

(Authors: Kennedy Torkura, Feng Cheng, Christoph Meinel)

A Survey of Authentication Methods in Mobile Cloud Computing....58

(Authors: Reshmi G., Rakshmy C. S.)

Workshop 3: The 7th International Workshop on RFID Security and Cryptography 2015 (RISC'15)

(Organisers: Chan Yeun and Jamal Zemerly)

Recent Advances of Smart Glass Application Security and Privacy....65

(Authors: Buti Al Delail, Chan Yeob Yeun)

Security and Privacy Framework for Ubiquitous Healthcare IoT Devices....70

(Authors: Ebrahim AL Alkeem, Chan Yeob Yeun, M. Jamal Zemerly)

Sessions

Session 1: Information Security

Passive Forensics for Image Splicing Based on PCA Noise Estimation....78

(Authors: Lifei Zhan, Yuesheng Zhu)

Crawler Classification using Ant-based Clustering Scheme....84

(Authors: Naomi Kuze, Shu Ishikura, Takeshi Yagiy, Daiki Chibay, Masayuki Murata)

Awareness, Behaviour and Culture: The ABC in Cultivating Security Compliance....90

(Authors: Emad Sherif, Steven Furnell, Nathan Clarke)

Fingerprint Security for Protecting EMV Payment Cards....95

(Authors: Himanshu Vats, Ron Ruhl, Shaun Aghili)

Session 2: Cloud Security

Secure Distributed Key Generation in Attribute Based Encryption Systems....103

(Authors: Daniel Pletea, Saeed Sedghi, Meilof Veeningen, Milan Petkovic)

Secure Personal Cloud Storage....108

(Authors: Kheng Kok Mar, Chee Yong Law, Victoria Chin)

Study of Applicability of Chinese Remainder Theorem based Group Key Management for Cloud Environment....114

(Authors: Vimal Kumar SathiyaBalan, Pavol Zavarsky, Dale Lindskog, Sergey Butakov)

A Study on the Flame Detection and Object Classification Technique using the Color Information....120

(Authors: Min-Gu Kim, Sung Bum Pan)

Session 3: Internet Applications and Technology

Case-Based Reasoning System for Predicting the Sustainability of a Telecentre....125 (Authors: Azerikatoa D. Ayoung, Boyce Sigweni, Pamela Abbott)

Rep on the block: A Next Generation Reputation System Based on the Blockchain....131 (Authors: Richard Dennis, Gareth Owen)

Long Running, Consistent, Web Service Transactions....139 (Authors: Aspen Olmsted)

Security Concerns and Mitigation Approaches for MOOC-Based Applications....145 (Authors: David Lebron, Hossain Shahriar, Rubana Yasmin Lupu)

Session 4: Internet Applications and Technology

Framework for Automatically Construct Ontology Knowledge Base from Semi-structured Datasets....152 (Authors: Gui-hyun Baek, Su-Kyoung Kim, Ki-hong Ahn)

Emerging New Trends of Location Based Systems Security....158 (Authors: Fatema Al Mansoori, Chan Yeob Yeun)

Optimized Hardware Design and Implementation of EC based Key Management Scheme for WSN....164 (Authors: Jilna P., Deepthi P. P., Jayaraj U. K.)

Bi-directional Traffic Management Support System with Decision Tree based Dynamic Routing....170 (Authors: Md. Rahatur Rahman, Shamim Akhter)

Session 5: Information Security

Application of Theory of Reasoned Action in u-Health System....177 (Author: Mincheol Kim)

Usable Security of Authentication Process: New Approach and Practical Assessment....179 (Authors: Maha M. Althobaiti, Pam Mayhew)

Security Aspects of PRNGs with Large State Spaces....181 (Authors: Gabriele Spenger, Jörg Keller)

Analysis of the Effectiveness of Black-Box Web Application Scanners in Detection of Stored SQL Injection and Stored XSS Vulnerabilities....186 (Authors: Muhammad Parvez, Pavol Zavarsky, Nidal Khoury)

Session 6: Information Security

Attacks on Web Browsers with HTML5....193 (Authors: Soojin Yoon, JongHun Jung, HwanKuk Kim)

The Awareness of Social Engineering in Information Revolution: Techniques and Challenges....198 (Author: Aisha Suliaman Alazri)

A Survey on Security and Privacy Issues in Big Data....202 (Authors: Duygu Sinanç Terzi, Ramazan Terzi, Şeref Sağiroğlu)

A Survey of Honeypot Research: Trends and Opportunities....208

(Author: Ronald M. Campbell, Keshnee Padayachee, Themba Masombuka)

Session 7: Information Security

Study of Compliance of Apple's Location Based APIs with Recommendations of the IETF Geopriv....214 (Authors: Rohit Beniwal, Pavol Zavarsky, Dale Lindskog)

Role-based Privilege Isolation: A Novel Authorization Model for Android Smart Devices....220 (Authors: Batsayan Das, Lakshmipadmaja Maddali, Harshita Vani Nallagonda)

Mitigating Insider Threats in a Cloud Using a Knowledgebase Approach while Maintaining Data Availability....226 (Authors: Qutaibah Althebyan, Rami Mohawesh, Qussai Yaseen, Yaser Jararweh)

Session 8: Internet Applications and e-Technology

iBook: An Interactive Book System....233

(Author: Shafiq ur Rehman)

Toward Power Consumption in Partitioned Wireless Sensors Networks Routing Technique....238

(Author: Ahmad Al-Khasawneh)

Transparent High Capacity Audio Watermarking in Wavelet Domain....242

(Authors: Mehdi Fallahpour, David Megías)

Session 9: Ubi/Cloud Computing

Towards a Holistic Brokerage System for Multi-Cloud Environment....249

(Authors: Bandar Aldawsari, Thar Baker, David England)

Application of Quantitative Security Metrics to Cloud Computing....256

(Authors: Kennedy Torkura, Feng Cheng, Christoph Meinel)

From Use Case Diagrams to Executable Context-aware Ambients....263

(Authors: Francois Siewe, Ahmed Al-alshuhai)

Session 10: Information Security

SCAP Benchmark for Cisco Router Security Configuration Compliance....270

(Authors: Chit Nyi Nyi Hlyne, Pavol Zavarsky, Sergey Butakov)

HeartSync: Mobile Pacemaker Failure Detector....277

(Authors: Clinton Medbery, Aspen Olmsted)

A Taxonomy of Perceived Information Security and Privacy Threats among IT Security Students....280

(Author: Ali Farooq, Syed Rameez Ullah Kakakhel, Seppo Virtanen, Jouni Isoaho)

Session 11: Internet Applications and Technology

Assessment of Research Efforts in Surveilance Systems....288

(Authors: Christos Ntrigkogias, Nineta Polemi)

Equilibrium Properties of Rate Control Protocols....295

(Author: Abhijit Kiran Valluri)

MapReduce: A Critical Analysis of Existing Authentication Methods....302

(Authors: Ibrahim Lahmer, Ning Zhang)

Load-Adjusted Video Quality Prediction Methods for Missing Data....314

(Author: Ruairí de Fréin)

Session 12: Information Security

RAT-based Malicious Activities Detection on Enterprise Internal Networks....321 (Authors: Masahiro Yamada, Masanobu Morinaga, Yuki Unno, Satoru Torii, Masahiko Takenaka)

Cyber-Physical Testbed - the impact of cyber attacks and the human factor....326

(Authors: Yannis Soupionis, Thierry Benoist)

Facial Expression Change Detection Algorithm Using Optical Flow Technique....332

(Authors: N. Zainudin, S. Ramli, T. Tan Zizi, N. A. Hasbullah, N. Ibrahim)

Internet of Things (IoT) Security: Current Status, Challenges and Prospective Measures....336

(Author: Rwan Mahmoud, Tasneem Yousuf, Fadi Aloul, Imran Zualkernan)

Session 13: Information Security

Conceptual Maps for Physical Security....343

(Author: Sabah Al-Fedaghi)

Current efforts in Ports and Supply Chains Risk Assesment....349

(Authors: Nineta Polemi, Spyros Papastergiou)

Automated Security Configuration Checklist for a Cisco IPsec VPN Router using SCAP 1.2....355

(Authors: Gabriel Biedima Peterside, Pavol Zavarsky, Sergey Butakov)

Session 14: Internet Applications and Technology

Managing Security Trade-offs in the Internet of Things Using Adaptive Security....362

(Authors: Wagas Aman, Einar Snekkenes)

Dynamic Forward Error Correction Algorithm over IP Network Services for ITU-T G.722.2 Codec....369

(Authors: Fatiha Merazka, Fulvio Babich)

A Generalized Web Service Response Time Metric to Support Collaborative and Corroborative Web Service

Monitoring....373

(Author: Ishmael Makitla, Jabu Mtsweni)

Session 15: Network Security Issues and Applications

The Role of HTML5 IndexedDB, the Past, Present and Future....379

(Authors: Stefan Kimak, Jeremy Ellman)

Predicting Multi-Stage Attacks Based on IP Information....384 (Authors: Abdulrazaq Almutairi, David Parish, James Flint)

Virtual Closed Networks: A Secure Approach to Autonomous Mobile Ad hoc Networks....391 (Authors: Darren Hurley-Smith, Jodie Wetherall, Andrew Adekunle)

Session 16: Information Security

Low Complexity Linear Equalization of Doubly Selective Channel....400 (Authors: Sajjad Ahmed Ghauri, Hasan Humayun, Mobeen Iqbal)

Transparent Authentication Systems for Mobile Device Security: A Review....406 (Authors: Saud Nejr Alotaibi, Steven Furnell, Nathan Clarke)

Detecting Intelligent Malware on Dynamic Android Analysis Environments....414 (Author: Shirish Singh, Bharavi Mishra, Saket Singh)

Session 17: Internet Applications and Technology

The Effectiveness of Digital Game for Introductory Programming Concepts....421 (Authors: Wong Seng Yue, Wong Lai Wan)

Visual Location Recognition using Smartphone Sensors for Indoor Environment....426 (Authors: Guanyuan Feng, Xuezhi Tan, Lin Ma)

Fountain-Code-Enabled DCF for Optimazing Throughput in Wireless Sensors....431 (Authors: Rachid Aouami, Essaid Sabir, Mounir Rifi, Mohamed Ouzzif)

Session 18: Internet Applications and Technology

Dragoon: Advanced Modelling of IP Geolocation by use of Latency Measurements....438 (Authors: Peter Hillmann, Lars Stiemert, Gabi Dreo Rodosek, Oliver Rose)

(Authors: Peter Hillmann, Lars Stiemert, Gabi Dreo Rodosek, Oliver Rose)

Usability Evaluation of Twitter in Android Platform for Elderly Arab Users Using Morae Tool....446 (Authors: Mashail Al-khomsan, Alaa Al-Arjan, Abrar Al-Amro, Khalid Al-Nafjan)

An extension of RSA_512 to RSA_1024 Core under Hardware Platform based on Montgomery Powering....448 (Authors: Wahiba Hentabli, Fatiha Merazka)