Contents – Part I

Cloud Computing Security

Inferring the Stealthy Bridges Between Enterprise Network Islands in Cloud Using Cross-Layer Bayesian Networks ........................................... 3
  Xiaoyan Sun, Jun Dai, Anoop Singhal, and Peng Liu

A Secure Architecture for Inter-cloud Virtual Machine Migration .......... 24
  Tayyaba Zeb, Abdul Ghafoor, Awais Shibli, and Muhammad Yousaf

STRE: Privacy-Preserving Storage and Retrieval over Multiple Clouds ...... 36
  Jingwei Li, Dan Lin, Anna Squicciarini, and Chunfu Jia

An Effective Search Scheme Based on Semantic Tree Over Encrypted Cloud Data Supporting Verifiability ................................................. 45
  Zhangjie Fu, Jiangang Shu, and Xingming Sun

Policy Driven Node Selection in MapReduce ...................................... 55
  Anna C. Squicciarini, Dan Lin, Smitha Sundareswaran, and Jingwei Li

Authentication and Identity

GridMap: Enhanced Security in Cued-Recall Graphical Passwords ........ 75
  Nicolas Van Balen and Haining Wang

UAuth: A Strong Authentication Method from Personal Devices to Multi-accounts ................................................................. 95
  Yazhe Wang, Mingming Hu, and Chen Li

TPM-Based Authentication Mechanism for Apache Hadoop .................. 105
  Issa Khalil, Zuochao Dou, and Abdallah Khreishah

An Authentication and Key Management Scheme for Heterogeneous Sensor Networks .............................................................. 123
  Sarmadullah Khan, Rafiullah Khan, Inam Bari, and Naveed Jan

Social Authentication Identity: An Alternate to Internet Real Name System ... 132
  Chengcheng Shao, Liang Chen, Shuo Fan, and Xinwen Jiang

On the Usability of Two-Factor Authentication .................................... 141
  Ding Wang and Ping Wang
## Network Security

- **Securing Resource Discovery in Content Hosting Networks**
  
  *Sushama Karumanchi, Jingwei Li, and Anna Squicciarini*  
  
  Page 153

- **Detection of Botnet Command and Control Traffic by the Identification of Untrusted Destinations**
  
  *Pieter Burghouwt, Marcel Spruit, and Henk Sips*  
  
  Page 174

- **Keep the Fakes Out: Defending Against Sybil Attack in P2P Systems**
  
  *Kan Chen, Peidong Zhu, and Yueshan Xiong*  
  
  Page 183

## Privacy and Wireless Security

- **Anonymous Publish-Subscribe Systems**
  
  *Binh Vo and Steven Bellovin*  
  
  Page 195

- **Friendly Jamming for Secure Localization in Vehicular Transportation**
  
  *Bhaswati Deka, Ryan M. Gerdes, Ming Li, and Kevin Heaslip*  
  
  Page 212

- **Visual-Assisted Wormhole Attack Detection for Wireless Sensor Networks**
  
  *Eirini Karapistoli, Panagiotis Sarigiannidis, and Anastasios A. Economides*  
  
  Page 222

- **Implementing an Affordable and Effective GSM IMSI Catcher with 3G Authentication**
  
  *Max Suraev*  
  
  Page 239

## System and Software Security

- **A Simple and Novel Technique for Counteracting Exploit Kits**
  
  *Byungho Min and Vijay Varadharajan*  
  
  Page 259

- **Policy Enforcement Point Model**
  
  *Yosra Ben Mustapha, Hervé Debar, and Gregory Blanc*  
  
  Page 278

- **Control Flow Obfuscation Using Neural Network to Fight Concolic Testing**
  
  *Haoyu Ma, Xinjie Ma, Weijie Liu, Zhipeng Huang, Debin Gao, and Chunfu Jia*  
  
  Page 287

- **EFS: Efficient and Fault-Scalable Byzantine Fault Tolerant Systems Against Faulty Clients**
  
  *Quanwei Cai, Jingqiang Lin, Fengjun Li, Qiong Xiao Wang, and Daren Zha*  
  
  Page 305

- **SCADS: Separated Control- and Data-Stacks**
  
  *Christopher Kugler and Tilo Müller*  
  
  Page 323
Crypto

Improving the Security of the HMQV Protocol Using Tamper-Proof Hardware ........................................ 343
Qianying Zhang, Shijun Zhao, Yu Qin, and Dengguo Feng

TST: A New Randomness Test Method Based on Coupon Collector’s Problem.................................................. 362
Qinglong Zhang, Zongbin Liu, Quanwei Cai, and Ji Xiang

Tree-Based Multi-dimensional Range Search on Encrypted Data with Enhanced Privacy .................................. 374
Boyang Wang, Yantian Hou, Ming Li, Haitao Wang, Hui Li, and Fenghua Li

Hardware Implementation of Cryptographic Hash Function Based on Spatiotemporal Chaos ......................... 395
Yuling Luo, Junxiu Liu, Lvchen Cao, Jinjie Bi, and Senhui Qiu

An Information-Theoretic Approach for Secure Protocol Composition ......................................................... 405
Yi-Ting Chiang, Tsan-Sheng Hsu, Churn-Jung Liau, Yun-Ching Liu, Chih-Hao Shen, Da-Wei Wang, and Justin Zhan

Mobile Security

Towards a Systematic Study of the Covert Channel Attacks in Smartphones.................................................. 427
Swarup Chandra, Zhiqiang Lin, Ashish Kundu, and Latifur Khan

DroidKin: Lightweight Detection of Android Apps Similarity........................................................................... 436
Hugo Gonzalez, Natalia Stakhanova, and Ali A. Ghorbani

Detecting Malicious Behaviors in Repackaged Android Apps with Loosely-Coupled Payloads Filtering Scheme ................................................................................................................. 454
Lulu Zhang, Yongzheng Zhang, and Tianming Zang

Defending Blind DDoS Attack on SDN Based on Moving Target Defense......................................................... 463
Duohe Ma, Zhen Xu, and Dongdai Lin

Function Escalation Attack................................................................................................................................. 481
Chen Cao, Yuqing Zhang, Qixu Liu, and Kai Wang

RAMSES: Revealing Android Malware Through String Extraction and Selection ............................................. 498
Lautaro Dolberg, Quentin Jérôme, Jérôme François, Radu State, and Thomas Engel

Detecting Mobile Malware with TMSVM ........................................................................................................... 507
Xi Xiao, Xianni Xiao, Yong Jiang, and Qing Li
Posters

Research on Credible Regulation Mechanism for the Trading of Digital Works

Guozhen Shi, Ying Shen, Fenghua Li, Mang Su, and Dong Liu

Coordination and Concurrency Aware Likelihood Assessment of Simultaneous Attacks.

Léa Samarji, Nora Cuppens-Boulahia, Frédéric Cuppens, Serge Papillon, Wael Kanoun, and Samuel Dubus

Domain Algorithmically Generated Botnet Detection and Analysis

Xiaolin Xu, Yonglin Zhou, and Qingshan Li

Towards Improving Service Accessibility by Adaptive Resource Distribution Strategy

Jinqiao Shi, Xiao Wang, Binxing Fang, Qingfeng Tan, and Li Guo

Hybrid Detection Using Permission Analysis for Android Malware

Haofeng Jiao, Xiaohong Li, Lei Zhang, Guangquan Xu, and Zhiyong Feng

Content Security Scheme for Content Centric Networks

Fawad Khan, Sarmad Ullah Khan, and Inam Bari

Detection of Food Safety Topics Based on SPLDAs

Jinshuo Liu, Yabo Li, Yingyue Peng, Juan Deng, and Xin Chen

Platform Neutral Sandbox for Analyzing Malware and Resource Hogger Apps

Parvez Faruki, Vijay Kumar, Ammar B., M.S. Gaur, Vijay Laxmi, and Mauro Conti

Web Security

JumpBox – A Seamless Browser Proxy for Tor Pluggable Transports

Jeroen Massar, Ian Mason, Linda Briesemeister, and Vinod Yegneswaran

Abusing Browser Address Bar for Fun and Profit - An Empirical Investigation of Add-On Cross Site Scripting Attacks

Yinzhi Cao, Chao Yang, Vaibhav Rastogi, Yan Chen, and Guofei Gu

Characterizing Google Hacking: A First Large-Scale Quantitative Study

Jialong Zhang, Jayant Notani, and Guofei Gu
Contents – Part II

Doctoral Symposium

A Performance Comparison Study of a Coverage-Preserving Node Scheduling Scheme and Its Enhancement in Sensor Networks .......................... 3
Qun Wang, Huanyan Qian, Peiyu Ji, Yu Xie, and Shuhui Yang

An Improved Authorization Model in Trust Network. .............................. 10
Xianming Gao, Xiaozhe Zhang, Baosheng Wang, and Huiting Shi

KEMF: Key Management for Federated Sensor Networks .......................... 17
Piers O’Hanlon, Joss Wright, Ian Brown, and Tulio de Souza

CPS²: A Contextual Privacy Framework for Social Software ........................ 25
Rula Sayaf, Dave Clarke, and Richard Harper

Are You Really My Friend? Exactly Spatiotemporal Matching Scheme in Privacy-Aware Mobile Social Networks ................................. 33
Ben Niu, Xiuguang Li, Xiaoyan Zhu, Xiaoqing Li, and Hui Li

RFID Authentication Protocol Resistant to the Man-in-the-Middle Attack. .... 41
Li Zhai and ChuanKun Wu

Intrusion Detection

METIS: A Two-Tier Intrusion Detection System for Advanced Metering Infrastructures ................................................................. 51
Vincenzo Gulisano, Magnus Almgren, and Marina Papatriantafilou

Online Detection of Concurrent Prefix Hijacks ................................. 69
Shen Su, Beichuan Zhang, and Binxing Fang

Countermeasures for Mitigating ICN Routing Related DDoS Attacks ....... 84
Eslam G. AbdAllah, Mohammad Zulkernine, and Hossam S. Hassanein

A New Anomaly Detection Method Based on IGTE and IGFE ............... 93
Ziyu Wang, Jiahai Yang, and Fuliang Li

International Workshop on Applications and Technologies in Cyber Security (ATCS)

Forensic Potentials of Solid State Drives ............................................. 113
Zubair Shah, Abdun Naser Mahmood, and Jill Slay
Cloud Security from Users Point of View: A Pragmatic Study with Thematic Analysis ..................................................................................................................... 127
Saira Syed and Quazi Mamun

A Secure Real Time Data Processing Framework for Personally Controlled Electronic Health Record (PCEHR) System ................................................................ 141
Khandakar Rabbi, Mohammed Kaosar, Md Rafiqul Islam, and Quazi Mamun

Novel Iterative Min-Max Clustering to Minimize Information Loss in Statistical Disclosure Control ................................................................................... 157
Abdun Naser Mahmood, Md Enamul Kabir, and Abdul K. Mustafa

Securing Sensor Networks by Moderating Frequencies ........................................................................................................ 173
Pinaki Sarkar, Priyatosh Mahish, Morshed Uddin Chowdhury, and Kouichi Sakurai

Intelligent Financial Fraud Detection Practices: An Investigation .................................................................................................................. 186
Jarrod West, Maumita Bhattacharya, and Rafiqul Islam

Network Traffic Pattern Analysis Using Improved Information Theoretic Co-clustering Based Collective Anomaly Detection .................................................................. 204
Mohiuddin Ahmed and Abdun Naser Mahmood

A Survey on Mining Program-Graph Features for Malware Analysis ........................................................................................................... 220
Md. Saiful Islam, Md. Rafiqul Islam, A.S.M. Kayes, Chengfei Liu, and Irfan Altas

Defence Against Code Injection Attacks .......................................................................................................................... 237
Hussein Alnabulsi, Quazi Mamun, Rafiqul Islam, and Morshed U. Chowdhury

False Data Injection Attack Targeting the LTC Transformers to Disrupt Smart Grid Operation ........................................................................ 252
Adnan Anwar, Abdun Naser Mahmood, and Mohiuddin Ahmed

A Domain-Based Multi-cluster SIP Solution for Mobile Ad Hoc Network ........................................................................... 267
Ala‘ Aburumman and Kim-Kwang Raymond Choo

DAPRO 2014 and SSS 2014 International Workshop on Data Protection in Mobile and Pervasive Computing (DAPRO) International Workshop on Secure Smart Systems (SSS)

virtio-ct: A Secure Cryptographic Token Service in Hypervisors .................................................................................................................. 285
Le Guan, Fengjun Li, Jiwu Jing, Jing Wang, and Ziqiang Ma

Blind Format String Attacks ............................................................................................................................................... 301
Fatih Kilic, Thomas Kittel, and Claudia Eckert
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>An Empirical Evaluation of Software Obfuscation Techniques Applied</td>
<td>315</td>
</tr>
<tr>
<td>to Android APKs</td>
<td></td>
</tr>
<tr>
<td><em>Felix C. Freiling, Mykola Protsenko, and Yan Zhuang</em></td>
<td></td>
</tr>
<tr>
<td>Towards Privacy-Preserving Web Metering via User-Centric Hardware</td>
<td>329</td>
</tr>
<tr>
<td><em>Fahad Alarifi and Maribel Fernández</em></td>
<td></td>
</tr>
<tr>
<td>Towards Efficient Update of Access Control Policy for Cryptographic</td>
<td>341</td>
</tr>
<tr>
<td>Cloud Storage</td>
<td></td>
</tr>
<tr>
<td><em>Weiyu Jiang, Zhan Wang, Limin Liu, and Neng Gao</em></td>
<td></td>
</tr>
<tr>
<td><strong>International Workshop on System Level Security of Smartphones</strong></td>
<td></td>
</tr>
<tr>
<td>Uncovering the Dilemmas on Antivirus Software Design in Modern Mobile</td>
<td>359</td>
</tr>
<tr>
<td>Platforms</td>
<td></td>
</tr>
<tr>
<td><em>Heqing Huang, Kai Chen, Peng Liu, Sencun Zhu, and Dinghao Wu</em></td>
<td></td>
</tr>
<tr>
<td>Transplantation Attack: Analysis and Prediction</td>
<td>367</td>
</tr>
<tr>
<td><em>Zhongwen Zhang, Ji Xiang, Lei Wang, and Lingguang Lei</em></td>
<td></td>
</tr>
<tr>
<td>Timing-Based Clone Detection on Android Markets</td>
<td>375</td>
</tr>
<tr>
<td>*Yingjun Zhang, Kezhen Huang, Yuling Liu, Kai Chen, Liang Huang,</td>
<td></td>
</tr>
<tr>
<td>and Yifeng Lian</td>
<td></td>
</tr>
<tr>
<td>A New Trust Chain Security Evaluation Model and Tool</td>
<td>382</td>
</tr>
<tr>
<td><em>Wei Hu, Dongyao Ji, Ting Wang, and Gang Yao</em></td>
<td></td>
</tr>
<tr>
<td>A System for Privacy Information Analysis and Safety Assessment</td>
<td>392</td>
</tr>
<tr>
<td>of iOS Applications</td>
<td></td>
</tr>
<tr>
<td><em>Bin Li and Zhijie Feng</em></td>
<td></td>
</tr>
<tr>
<td>How We Found These Vulnerabilities in Android Applications</td>
<td>399</td>
</tr>
<tr>
<td><em>Bin Ma</em></td>
<td></td>
</tr>
<tr>
<td><strong>Author Index</strong></td>
<td>407</td>
</tr>
</tbody>
</table>
International Conference on Security and Privacy in Communication Networks
10th International ICST Conference, SecureComm 2014, Beijing, China, September 24-26, 2014, Revised
Selected Papers, Part I
Tian, J.; Jing, J.; Srivatsa, M. (Eds.)
2015, XIX, 635 p. 193 illus. in color., Softcover
ISBN: 978-3-319-23828-9