

# **2018 IEEE Conference on Communications and Network Security (CNS 2018)**

**Beijing, China  
30 May – 1 June 2018**



**IEEE Catalog Number: CFP18CNM-POD  
ISBN: 978-1-5386-4587-1**

**Copyright © 2018 by the Institute of Electrical and Electronics Engineers, Inc.  
All Rights Reserved**

*Copyright and Reprint Permissions:* Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

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

IEEE Catalog Number:	CFP18CNM-POD
ISBN (Print-On-Demand):	978-1-5386-4587-1
ISBN (Online):	978-1-5386-4586-4

**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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

## Main Conference

**Thursday, May 31, 08:30 - 09:30**

### IEEE CNS 2018 - Main Conference: Keynote 1

The Advertisement Exchange: How To Develop Agile Cryptographic Support for an Evolving Ecosystem  
**Moti Yung**

Room: Grand Ballrooms 1 and 2

Chairs: Loukas Lazos (University of Arizona, USA), Peng Liu (Pennsylvania State University, USA)

Developing of Systems within a global infrastructure (or a cloud) has to take into account that the underlying system will evolve, new versions of software will develop, and if the system is successful then further services will be added.

The development of security tools to such systems has to consider agility and scale-up of the initial design and adaptation to the evolving nature of the system. In fact, we argue that this is a basic principle in deployment of security solutions in modern global ecosystems. For example, cryptographic solutions have to be designed with extended scope in mind and with enough flexibility to allow the growing system to be able to exploit the existing cryptographic tools and methods (since a drastic change may be overly complex and will result in much development overhead).

We demonstrate this "agility principle" by reviewing the development of cryptographic solution to Google's global Advertisement Exchange (ADX), which is the system managing auctions for placing banner ads throughout the Internet.

**Thursday, May 31, 09:45 - 11:15**

### IEEE CNS 2018 - Main Conference: Wireless Security

Room: Grand Ballroom 1

Chair: Ming Li (University of Arizona, USA)

***ROSTER: Radio Context Attestation in Cognitive Radio Network..... 1***

Ning Zhang, Wenhai Sun, Wenjing Lou and Thomas Hou (Virginia Tech, USA); Wade Trappe (WINLAB, Rutgers University, USA)

***Pilot Contamination Attack Detection for NOMA in Mm-Wave and Massive MIMO 5G Communication..... 10***

Ning Wang (GMU, USA); Long Jiao and Kai Zeng (George Mason University, USA)

***Feasibility of Passive Eavesdropping in Massive MIMO: An Experimental Approach..... 19***

Chia-Yi Yeh and Edward W. Knightly (Rice University, USA)

***Physical Layer Key Generation Using Virtual AoA and AoD of mmWave Massive MIMO Channel..... 28***

Long Jiao (George Mason University, USA); Jie Tang (UESTC in China, P.R. China); Kai Zeng (George Mason University, USA)

### IEEE CNS 2018 - Main Conference: Privacy 1

Room: Grand Ballroom 2

Chair: Rui Zhang (University of Delaware, USA)

***PSCluster: Differentially Private Spatial Cluster Detection for Mobile Crowdsourcing Applications..... 37***

Boyang Hu (University of Nebraska-Lincoln, USA); Baojian Zhou (University of Albany, USA); Qiben Yan (University of Nebraska-Lincoln, USA); Adil Alim and Feng Chen (University of Albany, USA); Huacheng Zeng (University of Louisville, USA)

***DPDA: A Differentially Private Double Auction Scheme for Mobile Crowd Sensing..... 46***

Wenqiang Jin and Ming Li (University of Nevada, Reno, USA); Linke Guo (Binghamton University,

USA); Lei Yang (University of Nevada, Reno, USA)

***Practical Collaborative Learning for Crowdsensing in the Internet of Things with Differential Privacy.....55***

Yuanxiong Guo and Yanmin Gong (Oklahoma State University, USA)

***Pseudonym Inference in Cooperative Vehicular Traffic Scenarios.....64***

Xu Chu (Shanghai Jiaotong University, P.R. China); Na Ruan (Shanghai Jiao Tong University, P.R. China); Ming Li (University of Arizona, USA); Weijia Jia (Shanghai Jiaotong University, P.R. China)

**Thursday, May 31, 11:30 - 13:00**

**IEEE CNS 2018 - Main Conference: Location Privacy**

Room: Grand Ballroom 1

Chair: Guoliang Xue (Arizona State University, USA)

***Secure RSS-Fingerprint-Based Indoor Positioning: Attacks and Countermeasures.....73***

Lizhou Yuan, Yidan Hu, Yunzhi Li and Rui Zhang (University of Delaware, USA); Yanchao Zhang and Terri Hedgpeth (Arizona State University, USA)

***Preserving Location Privacy in Ride-Hailing Service.....82***

Youssef Khazbak (The Pennsylvania State University, USA); Jingyao Fan (Pennsylvania State University, USA); Sencun Zhu and Guohong Cao (The Pennsylvania State University, USA)

***On Choosing Between Privacy Preservation Mechanisms for Mobile Trajectory Data Sharing.....91***

Rajkarn Singh (University of Edinburgh, United Kingdom (Great Britain)); George Theodorakopoulos (Cardiff University, United Kingdom (Great Britain)); Mahesh K Marina and Myrto Arapinis (The University of Edinburgh, United Kingdom (Great Britain))

***Shooting to the Stars: Secure Location Verification via Meteor Burst Communications.....100***

Savio Sciancalepore (Hamad Bin Khalifa University, Qatar); Gabriele Oligeri (KINDI Center for Computing Research - Qatar University, Qatar); Roberto Di Pietro (Hamad Bin Khalifa University, Qatar)

**IEEE CNS 2018 - Main Conference: Cloud Security**

Room: Grand Ballroom 2

Chair: Roberto Di Pietro (Hamad Bin Khalifa University, Qatar)

***Secure and Efficient Multi-Attribute Range Queries based on Comparable Inner Product Encoding.....109***

Qin Liu (Hunan University & Temple University, P.R. China); Sixia Wu and Shuyu Pei (Hunan University, P.R. China); Jie Wu (Temple University, USA); Tao Peng and Guojun Wang (Guangzhou University, P.R. China)

***Tapping the Potential: Secure Chunk-based Deduplication of Encrypted Data for Cloud Backup.....118***

Wenhai Sun, Ning Zhang, Wenjing Lou and Thomas Hou (Virginia Tech, USA)

***Harnessing the Cloud for Secure and Efficient Outsourcing of Non-negative Matrix Factorization...127***

Shiran Pan (Institute of Information Engineering, Chinese Academy of Sciences & School of Cyber Security, University of Chinese Academy of Sciences, P.R. China); Fangyu Zheng (State Key Laboratory of Information Security, Institute of Information Engineering, P.R. China); Wen Tao Zhu and Qiong Xiao Wang (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China)

***Repairing Faulty Nodes and Locating a DynamicallySpawned Black Hole Search Using Tokens.....136***

Mengfei Peng (Aurora Technology Development, Toronto, Canada); Wei Shi and Jean-Pierre Corriveau (Carleton University, Canada)

**Thursday, May 31, 14:30 - 16:30**

**IEEE CNS 2018 - Main Conference: CPS Security**

Room: Grand Ballroom 1

Chair: Yingfei Dong (University of Hawaii, USA)

***Detecting Data Integrity Attacks on Correlated SolarFarms Using Multi-layer Data Driven Algorithm..... 145***

Kin Gwn Lore, Devu Shila and Lingyu Ren (United Technologies Research Center, USA)

***Modeling Cost of Countermeasures in Software Defined Networking-enabled Energy Delivery Systems..... 154***

Kamrul Hasan and Sachin Shetty (Old Dominion University, USA); Amin Hassanzadeh, Malek Ben Salem and Jay Chen (Accenture Technology Labs, USA)

***Mitigating Stealthy False Data Injection Attacks Against State Estimation in Smart Grid..... 163***

Jingyao Fan (Pennsylvania State University, USA); Youssef Khazbak (The Pennsylvania State University, USA); Jue Tian (Xi'an Jiaotong University, P.R. China); Ting Liu (Xi'an Jiaotong University, PRC, P.R. China); Guohong Cao (The Pennsylvania State University, USA)

***BLOC: A Game-Theoretic Approach to Orchestrate CPS against Cyber Attacks..... 172***

Mina Guirguis, Alireza Tahsini, Khan Siddique, Clara Novoa and Justin Moore (Texas State University, USA); Christine Julien (University of Texas at Austin, USA); Noah Dunstatter (Texas State University, USA)

***Manipulating Drone Dynamic State Estimation to Compromise Navigation..... 181***

Wenxin Chen and Yingfei Dong (University of Hawaii, USA); Zhenhai Duan (Florida State University, USA)

**IEEE CNS 2018 - Main Conference: IoT Security**

Room: Grand Ballroom 2

Chair: Yan Wang (SUNY at Binghamton, USA)

***Deploying Robust Security in Internet of Things..... 190***

Ruozhou Yu, Guoliang Xue, Vishnu Teja Kilari and Xiang Zhang (Arizona State University, USA)

***Cloud-Assisted Privacy-Preserving Classification for IoT Applications..... 199***

Lei Yang (Amazon LLC, USA); Fengjun Li (University of Kansas, USA)

***ACE of Spades in the IoT Security Game: A Flexible IPsec Security Profile for Access Control..... 208***

Santiago Aragón (SEEMOO TU Darmstadt, Germany); Marco Tiloca (SICS Swedish ICT AB, Sweden); Max Maass (Technische Universität Darmstadt, Germany); Matthias Hollick (Technische Universität Darmstadt & Secure Mobile Networking Lab, Germany); Shahid Raza (RISE SICS AB, Sweden)

***The Insecurity of Home Digital Voice Assistants - Vulnerabilities, Attacks and Countermeasures..... 217***

Xinyu Lei (Michigan State University, USA); Guan-Hua Tu (Michigan State University, USA); Alex X. Liu (Michigan State University, USA); Chi-Yu Li (National Chiao Tung University, Taiwan); Tian Xie (Michigan State University, USA)

***Home Alone: The Insider Threat of Unattended Wearables and A Defense using Audio Proximity..... 226***

Prakash Shrestha (University of Alabama at Birmingham, USA); Babins Shrestha (University of Alabama at Birmingham, USA); Nitesh Saxena (University of Alabama at Birmingham, USA)

**Friday, June 1, 08:00 - 09:15**

**IEEE CNS 2018 - Main Conference: Keynote 2**

Finding Very Damaging Needles in Very Large Haystacks

**Vern Paxson**

Room: Grand Ballrooms 1 and 2

Chairs: Loukas Lazos (University of Arizona, USA), Peng Liu (Pennsylvania State University, USA)

Many of the most costly security compromises that enterprises suffer manifest as tiny trickles of behavior hidden within oceans of other site activity. This talk will exam the problem of developing robust detectors for particular forms of such activity. The themes include research pitfalls, the crucial need to leverage domain knowledge in an apt fashion, and why machine learning is very difficult to effectively apply for such problems.

**Friday, June 1, 09:45 - 11:45**

## **IEEE CNS 2018 - Main Conference: Wi-Fi Security and Biometrics**

Room: Grand Ballroom 1

Chair: Fengjun Li (University of Kansas, USA)

### ***Towards In-baggage Suspicious Object Detection Using Commodity WiFi.....235***

Chen Wang (Rutgers University, USA); Jian Liu (WINLAB, Rutgers University, USA); Yingying Chen (Rutgers University, USA); Hongbo Liu (Indiana University-Purdue University Indianapolis, USA); Yan Wang (SUNY at Binghamton, USA)

### ***Replicating Your Heart: Exploring Presentation Attacks on ECG Biometrics.....N/A***

Yang Gao and Wei Wang (State University of New York at Buffalo, USA); Borui Li and Omkar Patil (State University of New York at Binghamton, USA); Zhanpeng Jin (State University of New York at Buffalo, USA)

### ***e-SAFE: Secure, Efficient and Forensics-Enabled Access to Implantable Medical Devices.....244***

Haotian Chi (Temple University, USA); Longfei Wu (Fayetteville State University, USA); Xiaojiang Du and Qiang Zeng (Temple University, USA); Paul Ratazzi (Air Force Research Laboratory, USA)

### ***The Dark Side of Operational Wi-Fi Calling Services.....253***

Tian Xie (Michigan State University, USA); Guan-Hua Tu (Michigan State University, USA); Chi-Yu Li (National Chiao Tung University, Taiwan); Chunyi Peng (Purdue University, USA); Jiawei Li and Mi Zhang (Michigan State University, USA)

### ***N-Guard: a Solution to Secure Access to NFC tags.....262***

Roberto Di Pietro (Hamad Bin Khalifa University, Qatar); Gabriele Oligeri (KINDI Center for Computing Research - Qatar University, Qatar); Xavier Salleras (Pompeu Fabra University, Spain); Matteo Signorini (Nokia Bell Labs Paris, France)

## **IEEE CNS 2018 - Main Conference: Authentication**

Room: Grand Ballroom 2

Chair: Yanchao Zhang (Arizona State University, USA)

### ***SecureMatch: Scalable Authentication and Key Relegation for IoT Using Physical-Layer Techniques.....271***

Hanif Rahbari (Rochester Institute of Technology, USA); Jinshan Liu and Jung-Min (Jerry) Park (Virginia Tech, USA)

### ***SoundAuth: Secure Zero-Effort Two-Factor Authentication Based on Audio Signals.....280***

Mingyue Wang (Institute of Information Engineering, Chinese Academy of Sciences & School of Cyber Security, University of Chinese Academy of Sciences, P.R. China); Wen Tao Zhu (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China); Shen Yan (University of Southern California, USA); Qiongxiao Wang (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China)

### ***Compact Energy and Delay-aware Authentication.....289***

Muslum Ozgur Ozmen, Rouzbeh Behnia and Attila Altay Yavuz (Oregon State University, USA)

***SybilFuse: Combining Local Attributes with Global Structure to Perform Robust Sybil Detection.....298***

Peng Gao (Princeton University, USA); Binghui Wang and Neil Gong (Iowa State University, USA);  
Sanjeev Kulkarni (Princeton University, USA); Kurt Thomas (Google, USA); Prateek Mittal  
(Princeton University, USA)

***Defending against Social Network Sybils with Interaction Graph Embedding.....307***

Zhi Yang, Yusi Zhang and Yafei Dai (Peking University, P.R. China)

## **Friday, June 1, 13:00 - 14:30**

### **IEEE CNS 2018 - Main Conference: Panel Session**

Intelligent Systems and Security Protection

Room: **Grand Ballroom 3**

Chair: Xiaofeng Wang (Indiana University at Bloomington, USA)

The panel will discuss the implications of emerging intelligent systems on security technologies, including the new security threats to these systems and new opportunities opened by leveraging intelligent techniques to enhance security protection.

Panelists:

Kai Chen (Chinese Academy of Science) Zhe Zhou (Fudan University) Xiaosheng Tan (360) Neil Zhang (Iowa State University)  
Wenyuan Xu (Zhejiang University)

## **Friday, June 1, 14:45 - 16:15**

### **IEEE CNS 2018 - Main Conference: Cyber Resilience**

Room: **Grand Ballroom 1**

Chair: Filipo Sharevski (DePaul University, USA)

***Truth-aware Optimal Decision-making Framework with Driver Preferences for V2V Communications.....316***

Mingshun Sun and Ming Li (University of Arizona, USA); Ryan Gerdes (Virginia Tech, USA)

***CONCEAL: A Strategy Composition for Resilient Cyber Deception- Framework, Metrics and Deployment.....325***

Qi Duan (University of North Carolina at Charlotte, USA); Ehab Al-Shaer (University of North Carolina Charlotte, USA); Mazharul Islam (UNC Charlotte, USA); Jafar Haadi Jafarian (UNCC, USA)

***Dynamic Practical Byzantine Fault Tolerance.....334***

Hao Xu, Yu Long, Zhiqiang Liu and Liu Zhen (Shanghai Jiao Tong University, P.R. China)

***Mitigation of Cascading Denial of Service Attacks on Wi-Fi Networks.....342***

Liangxiao Xin and David Starobinski (Boston University, USA)

### **IEEE CNS 2018 - Main Conference: System Security**

Room: **Grand Ballroom 2**

Chair: Ning Zhang (Virginia Tech, USA)

***Efficient Signature Generation for Classifying Cross-Architecture IoT Malware.....351***

Mohannad Alhanahnah, Qicheng Lin and Qiben Yan (University of Nebraska-Lincoln, USA); Ning Zhang (Virginia Tech, USA); Zhenxiang Chen (University of Jinan, P.R. China)

***Inference Attack in Android Activity based on Program Fingerprint.....360***

Li Yang, Teng Wei and Jian-feng Ma (Xidian University, P.R. China); Shui Yu (University of

Technology Sydney, Australia); Chao Yang (Xidian University & Michigan State University, P.R. China)

**Malware Coordination using the Blockchain: An Analysis of the Cerber Ransomware.....369**

Stijn Pletinckx and Cyril Trap (TU Delft, The Netherlands); Christian Doerr (Delft University of Technology, The Netherlands)

**Friday, June 1, 16:30 - 18:00**

**IEEE CNS 2018 - Main Conference: Privacy 2**

Room: Grand Ballroom 1

Chair: Linke Guo (Binghamton University, USA)

**Context-Aware Data Aggregation with Localized Information Privacy.....378**

Bo Jiang, Ming Li and Ravi Tandon (University of Arizona, USA)

**T-PriDO: A Tree-based Privacy-Preserving and Contextual Collaborative Online Big Data Processing System.....387**

Anni Zhou and Pan Zhou (Huazhong University of Science and Technology, P.R. China); Dapeng Oliver Wu (University of Florida, USA); Yuchong Hu (Huazhong University of Science and Technology, P.R. China); Shouling Ji (Zhejiang University, P.R. China & Georgia Institute of Technology, USA)

**Privacy-Preserving Watermarking Transformation Technique in a Distributed Environment.....396**

Ali Allami (Missouri S&T, USA); Mukesh Mohania (IBM Research - Australia, Australia); Wei Jiang (MS&T, USA)

**Privacy-Preserving Average Consensus on Directed Graphs Using Push-Sum.....405**

Huan Gao, Chunlei Zhang, Muaz Ahmad and Yongqiang Wang (Clemson University, USA)

**IEEE CNS 2018 - Main Conference: Attacks**

Room: Grand Ballroom 2

Chair: Ehab Al-Shaer (University of North Carolina Charlotte, USA)

**Detecting Payload Attacks on Programmable Logic Controllers (PLCs).....414**

Huan Yang, Liang Cheng and Mooi Choo Chuah (Lehigh University, USA)

**Towards High-performance X25519/448 Key Agreement in General Purpose GPUs.....423**

Jiankuo Dong (School of Cyber Security, University of Chinese Academy of Sciences, IIE, CAS, P.R. China); Fangyu Zheng (State Key Laboratory of Information Security, Institute of Information Engineering, P.R. China); Juanjuan Cheng (School of Cyber Security, University of Chinese Academy of Sciences, P.R. China); Jingqiang Lin (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China); Wuqiong Pan (Institute of Information Engineering, CAS, P.R. China); Ziyang Wang (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China)

**Fraud: Launching Cost-efficient and Scalable Mobile Click Fraud Has Never Been So Easy.....432**

Elliott Wen (The University of Auckland, New Zealand); Jiannong Cao (Hong Kong Polytechnic Univ, Hong Kong); Xuefeng Liu (Huazhong University of Science and Technology, P.R. China); Jiaxing Shen (The Hong Kong Polytechnic University, Hong Kong); Gerald Weber (The University of Auckland, New Zealand)



# SPC Workshop - IEEE CNS 2018: IEEE CNS 2018 - Fourth Workshop on Security and Privacy in the Cloud (SPC) - Program

## Committees

**Wednesday, May 30, 09:30 - 10:30**

### IEEE CNS 2018 - Main Conference: Keynote talk

Data Security and Privacy in Cloud Computing: Looking Back and Looking Forward  
**Wenjing Lou**

Room: Salon 6

Chair: Sara Foresti (Università degli Studi di Milano, Italy)

Despite the security and privacy concerns around moving data into the cloud, the cloud adoption has swept the enterprise IT market in the past decade. Many companies, big or small, have moved their IT services to the cloud. Many new applications also rely on a cloud backend to provide seemingly unlimited computing and storage capabilities as well as ubiquitous access anytime anywhere. At the same time, the rush to adopt cloud has exposed its vulnerabilities and risks. Just as unprecedented the capability and accessibility the cloud provides to its users, the scale of data theft and privacy leakage in the cloud becomes much larger and the damage caused more severe. The recent Facebook privacy crisis is an example of this devastating consequent.

In this talk, I will review our past work on data security and privacy in cloud computing. I will describe our research efforts on scalable and owner-centric secure data storage and sharing, public integrity verification of outsourced cloud data, and privacy-preserving search over encrypted cloud data. I will also talk about our recent research shift, from pure software- (i.e., crypto and algorithm) based data protection solutions, to hardware-assisted trustworthy data computation and protection, and a blockchain-based privacy policy enforcement framework.

**Wednesday, May 30, 11:00 - 12:30**

### IEEE CNS 2018 - Main Conference: Data Sharing and Publication

Room: Salon 6

***PERMON: An OpenStack Middleware for Runtime Security Policy Enforcement in Clouds.....441***

Azadeh Tabiban, Suryadipta Majumdar and Lingyu Wang (Concordia University, Canada); Mourad Debbabi (Concordia University, Montreal, Canada)

***Enabling Cyber Security Data Sharing for Large-scale Enterprises Using Managed Security Services.....448***

Xiao-Si Wang and Ian Herwono (Security Futures Practice, Research & Innovation, British Telecommunications plc, UK); Francesco Di Cerbo (SAP Security Research, 805 av Dr Maurice Donat, 06254 Mougins France); Paul Kearney (Cybersecurity Research Group, Birmingham City University, Birmingham, UK); Mark Shackleton (Security Futures Practice, Research & Innovation, British Telecommunications plc, UK)

***An Anonymous Data Control Access Protocol in Distributed Storage Systems.....N/A***

Gil Utard (Université de Picardie & Uglloo, France); Mariem Ben Fadhl (Uglloo, France)

**Wednesday, May 30, 14:00 - 15:15**

### IEEE CNS 2018 - Main Conference: Access Control and Cryptographic Protocols

Room: Salon 6

Chair: Gil Utard (Université de Picardie & Uglloo, France)

***Emergency Access Control Management Via Attribute Based Encrypted QR Codes.....455***

Sana Belguith (University of Auckland, New Zealand); Sarada Prasad Gochhayat and Mauro Conti (University of Padua, Italy); Giovanni Russello (University of Auckland, New Zealand)

***Achieving Fine-Grained Access Control with Discretionary User Revocation over Cloud Data.....463***

Qiuxiang Dong and Dijiang Huang (Arizona State University, USA); Jim Luo and Myong Kang (Naval Research Lab, USA)

***Delegating Elliptic-Curve Operations with Homomorphic Encryption.....472***

Carlos Aguilar-Melchor (University of Toulouse & IRIT/INP-ENSEEIH, France); Jean-Christophe Deneuville (University of Orléans -- INSA-CVL Bourges, France); Philippe Gaborit (University of Limoges, France); Tancrede Lepoint (SRI International, USA); Thomas Ricosset (Institut National Polytechnique de Toulouse & Thales Communications & Security, France)

**Wednesday, May 30, 15:45 - 17:00**

**IEEE CNS 2018 - Main Conference: Vulnerabilities and Attacks**

**Room: Salon 6**

Chair: Xiao-Si Wang (British Telecommunications plc, United Kingdom (Great Britain))

***Spot the Difference: Your Bucket is Leaking.....481***

Ankit Gangwal (University of Padova, Italy); Mauro Conti, Sarada Prasad Gochhayat and Gabriele Tolomei (University of Padua, Italy)

***LMHADC: Lightweight Method for Host based Anomaly Detection in Cloud using Mobile Agents.....488***

Tao Qin (Xi'an Jiaotong University, P.R. China); Ruoya Chen, Lei Wang and Chao He (Xi'an Jiaotong University, P.R. China)

***Function-Oriented Programming: A New Class of Code Reuse Attack in C Applications.....496***

Yingjie Guo, Liwei Chen and Gang Shi (University of Chinese Academy of Sciences, P.R. China)

# ADIoT Workshop-IEEE CNS 2018: IEEE CNS 2018 - IEEE International Workshop on Attacks and Defenses for Internet-of-Things (ADIoT) - Program

## Committees

**Wednesday, May 30, 09:00 - 10:30**

### **IEEE CNS 2018 - Main Conference: Session 1 - International Workshop on Attacks and Defenses for Internet-of-Things**

Room: Salon 5

***Hardware Security Threats Against Bluetooth Mesh Networks.....505***

Alexandre Adomnicai (Trusted Objects & EMSE, France); Jacques Fournier (CEA-Leti, France);  
Laurent Masson (Trusted Objects, France)

***Revisiting OAKE in the eCK Security Model.....514***

Guangye Sui (Fudan University, P.R. China)

***Status-based Detection of malicious code in Internet of Things (IoT) devices.....523***

Dongdi Wei and Xiaofeng Qiu (Beijing University of Posts and Telecommunications, P.R. China)

**Wednesday, May 30, 11:00 - 12:00**

### **IEEE CNS 2018 - Main Conference: Session 2 - International Workshop on Attacks and Defenses for Internet-of-Things**

Room: Salon 5

***Blind Rendezvous: A Promising Candidate of Secure Spectrum Access for D2D communications in IoT.....530***

Xingya Liu (Lamar University, USA)

# CPSSEC Workshop-CNS 2018: IEEE CNS 2018 - IEEE International Workshop on Cyber-Physical Systems Security (CPS-SEC) - Program

## Committees

**Wednesday, May 30, 09:30 - 12:30**

### **IEEE CNS 2018 - Main Conference: Cyber-Physical Systems Security**

Room: Salon 4

Chair: Chia-Mu Yu (National Chung Hsing University, Taiwan)

***Integrity of Integrated Navigation Systems.....535***

Mass Lund (Norwegian Defence University College, Norway); Jørgen Gulland (Royal Norwegian Naval Academy, Norway); Odd Sveinung Hareide (Royal Norwegian Navy, Norway); Øyvind Jøsok (Norwegian Defence Cyber Academy, Norway); Karl Olav Weum (Royal Norwegian Naval Academy, Norway)

***Support Vector Machine Detection of Data Framing Attack in Smart Grid.....540***

Jiao Wang (The University of Hong Kong, Hong Kong); Victor O. K. Li (University of Hong Kong, P.R. China)

**Coffee Break**

***Social-aware Jamming Allocation for Physical-layer Security in D2D Multicast Network.....545***

Shiwei Yan, Yong Shang and Yanbo Huang (Peking University, P.R. China)

***Security for Cyber-Physical Systems: Leveraging Cellular Networks and Fog Computing.....N/A***

Filipo Sharevski and Sharief Oteafy (DePaul University, USA)

# SSV Workshop - IEEE CNS 2018: IEEE CNS 2018 - 1st International Workshop on System Security and Vulnerability (SSV) - Program

## Committees

**Wednesday, May 30, 09:00 - 10:20**

### IEEE CNS 2018 - Main Conference: Session 1 - 1st International Workshop on System Security and Vulnerability

Room: Salon 1

Chair: Zhang Yuqing (University of Chinese Academy of Sciences, P.R. China)

***Real-time Detection of Passive Backdoor Behaviors on Android System.....552***

Yao Yao and Lipeng Zhu (XIDIAN University, P.R. China)

***Cyber-Physical Security Risk Assessment for Train Control and Monitoring Systems.....561***

Mouna Rekik (IFSTTAR, France); Christophe Gransart (University Lille Nord de France, France);  
Marion Berbineau (IFSTTAR, COSYS & University Lille Nord de France, France)

***Behavior Rhythm: An Effective Model for Massive Logs Characterizing and Security Monitoring in Cloud.....570***

Tao Qin (Xi'an Jiaotong University, P.R. China); Chao He (Xi'an Jiaotong University, P.R. China);  
Hezhi Jiang (Xi'an Jiaotong University, USA); Ruoya Chen (Xi'an Jiaotong University, P.R. China)

***An Approach for Predicting the Popularity of Online Security News Articles.....577***

Junli Kong and Baocang Wang (Xidian University, P.R. China)

**Wednesday, May 30, 10:40 - 12:00**

### IEEE CNS 2018 - Main Conference: Session 2 - 1st International Workshop on System Security and Vulnerability

Room: Salon 1

Chair: Zhang Yuqing (University of Chinese Academy of Sciences, P.R. China)

***SCPN-based Game Model for Security Situational Awareness in the Internet of Things.....583***

Fannv He (University of Chinese Academy of Sciences & China, P.R. China); Zhang Yu qing  
(Graduate University of Chinese Academy of Science, P.R. China); Huizheng Liu and Wei Zhou  
(University of Chinese Academy of Sciences, P.R. China)

***A Study and Simulation Research of Blackhole Attack on Mobile AdHoc Network.....588***

Guoquan Li (Xidian University, P.R. China); Zheng Yan (Aalto University & Xidian University,  
Finland); Yulong Fu (Xidian University, P.R. China)

## Posters

**Thursday, May 31, 17:00 - 18:00**

### **IEEE CNS 2018 - Posters: Poster Session**

Room: Grand Ballroom 1

***A Low Complexity Feature Extraction for the RF Fingerprinting Process.....594***

Yushan Li and Liufei Chen (UESTC, P.R. China); Chen Jie and Feiyi Xie (University of Electronic Science and Technology of China, P.R. China); Song Lin Chen and Hong Wen (UESTC, P.R. China)

***A Search-based Firmware Code Analysis Method for IoT Devices.....596***

Yifei Xu (Xi'an Jiaotong University, P.R. China); Ting Liu (Xi'an Jiaotong University, PRC, P.R. China); Pengfei Liu and Hong Sun (Xi'an Jiaotong University, P.R. China)

***Acceleration of Packet Classification via Inclusive Rules.....598***

Takashi Harada and Ken Tanaka (Kanagawa University, Japan); Kenji Mikawa (Niigata University, Japan)

***Aggregated-Query-as-a-Secure-Service for RF Spectrum Database-Driven Opportunistic Wireless Communications.....600***

Abdulhamid A. Adebayo, Danda B. Rawat and Moses Garuba (Howard University, USA); Laurent Njilla (Air Force Research Laboratory, USA)

***An Efficient Privacy-Preserving Dynamic Pricing-based Billing Scheme for Smart Grids.....602***

Prosanta Gope (National University of Singapore (NUS), Singapore); Biplab Sikdar (National University of Singapore, Singapore)

***An ISO/IEC 15408-2 Compliant Security Auditing System with Blockchain Technology.....604***

Shi-Chao Cha (National Taiwan University of Science and Technology, Taiwan); Kuo-Hui Yeh (National Dong Hwa University, Taiwan)

***Block Chain Based Secure Scheme For Mobile Communication.....606***

Liufei Chen, Yushan Li, Hong Wen, Wenxin Lei and Wenjing Hou (UESTC, P.R. China); Chen Jie (University of Electronic Science and Technology of China, P.R. China)

***DOPA: Detecting Open Ports in Android OS.....608***

Ali Alshehri, Hani Alshahrani, Abdulrahman Alzahrani, Raed Alharthi, Huirong Fu and Anyi Liu (Oakland University, USA); Ye Zhu (Cleveland State University, USA)

***Fine-grained Android Malware Detection based on Deep Learning.....610***

Dongfang Li (Tsinghua University, P.R. China); Wang Zhaoguo (Tsinghua National Lab for Information Science and Technology, P.R. China); Yibo Xue (Tsinghua university, P.R. China)

***Physical Intrusion Detection for Industrial Control System.....612***

Pengfei Liu (Xi'an Jiaotong University, P.R. China); Ting Liu (Xi'an Jiaotong University, PRC, P.R. China)

***Protecting Your Own Private Key in Cloud: Security, Scalability and Performance.....614***

Wenqian Yu (Intel Asia-Pacific Research & Development Ltd. & Intel, P.R. China); Ping Yu (Intel, P.R. China); Junyuan Wang, Changzheng Wei and Lu Gong (Intel Asia-Pacific Research & Development Ltd., P.R. China); Weigang Li (Intel, P.R. China); Bo Cui (Intel Asia-Pacific Research & Development Ltd., P.R. China); Hari Tadepalli and Brian Will (Intel, USA)

***Secret Dispersion: Secure Data Delivery in Cyber Physical System.....616***

Rui Hu and Yanmin Gong (Oklahoma State University, USA)

***SecureCASH: Securing Context-Aware Distributed Storage and Query Processing in Hybrid Cloud Framework.....618***

Geremew Begna, Danda B. Rawat and Moses Garuba (Howard University, USA); Laurent Njilla (Air Force Research Laboratory, USA)

***SignatureMiner: A fast Anti-Virus signature intelligence tool.....620***

Ignacio Martín and José Alberto Hernández (Universidad Carlos III de Madrid, Spain); Sergio de Los

Santos (Telefónica Digital, Spain)

***T-PAAD: Trajectory Privacy Attack on Autonomous Driving.....622***

Abdelnasser Banihani, Abdulrahman Alzahrani, Raed Alharthi and Huirong Fu (Oakland University, USA); George Corser (Saginaw Valley State University & Oakland University, USA)