**ICCCN 2017**

**The 26th International Conference on**

**Computer Communications and Networks**

**July 31 – August 3, 2017**

**Final Program**



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Technical Program Overview

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| July 30 (Sunday) |
| |  |  | | --- | --- | | 20:00 – 21:00 | Registration open (Pinnacle Foyer) | |
| July 31 (Monday) |
| |  |  | | --- | --- | | 07:00 | Registration open (Pinnacle Foyer)  Continental Breakfast (Pinnacle Foyer) | |
| |  |  | | --- | --- | | 08:20 - 08:30 | Opening Remarks  Room: Pinnacle I/II | |
| |  |  | | --- | --- | | 08:30 - 09:30 | Keynote I: Research Challenges and Solutions for IOT/CPS  Speaker: Prof. John Stankovic (University of Virginia)  Chair: Haiying Shen  Room: Pinnacle I/II | |
| |  |  | | --- | --- | | 09:30 - 10:00 | Coffee break | |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | 10:00 - 12:00 | Session 1  Cognitive Network  (Pinnacle I/II) | Session 2  Mobile Computing  (Shaughnessy I) | Session 3  Content Delivery Network  (Shaughnessy II) | Invited 1  Cloud  Computing  (Dundarave) | |
| |  |  | | --- | --- | | 12:00 - 13:30 | Lunch break | |
| |  |  | | --- | --- | | 13:30 - 15:00 | Panel I: Age of the Internet of Things  Moderator: Sajal Das  Room: Pinnacle I/II | |
| |  |  | | --- | --- | | 15:00 - 15:30 | Coffee break | |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | 15:30 - 17:30 | Session 4  Security, Privacy and Trust (1)  (Pinnacle I/II) | Session 5  Datacenter Network  (Shaughnessy I) | Invited 2  Social  Network  (Shaughnessy II) | Invited 3  Security, Privacy and Trust  (Dundarave) | |
| |  |  | | --- | --- | | 18:00 - 20:00 | Reception (Point Grey) | |

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| August 1 (Tuesday) |
| |  |  | | --- | --- | | 08:00 | Registration open (Pinnacle Foyer)  Continental Breakfast (Pinnacle Foyer) | |
| |  |  | | --- | --- | | 08:30 - 09:30 | Keynote II: Protecting Web sites from the Internet of Compromised Things Speaker: Prof. Bruce Maggs (Duke University/ Akamai Technologies)  Chair: Christian Poellabauer  Room: Pinnacle I/II | |
| |  |  | | --- | --- | | 09:30 - 10:00 | Coffee break | |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | 10:00 - 12:00 | Session 6  Software Defined Network (1)  (Pinnacle I/II) | Session 7  IoT and Multimedia  (Shaughnessy I) | Session 8  Communication Network  (Shaughnessy II) | Invited 4  Mobile  Computing (1)  (Dundarave) | |
| |  |  | | --- | --- | | 12:00 - 13:30 | Lunch break | |
| |  |  | | --- | --- | | 13:30 - 15:00 | Panel II: Cloud Scale Big Data Analytics  Moderator: Chris Stewart  Room: Pinnacle I/II | |
| |  |  | | --- | --- | | 15:00 - 15:30 | Coffee break | |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | 15:30 - 17:30 | Session 9  Security, Privacy and Trust (2)  (Pinnacle I/II) | Session 10  Cloud and Edge Computing  (Shaughnessy I) | Invited 5  Communication Network  (Shaughnessy II) | Invited 6  Distributed System (1)  (Dundarave) | |
| |  |  | | --- | --- | | 19:00 - 21:00 | Banquet (Pinnacle II/III) | |

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| August 2 (Wednesday) |
| |  |  | | --- | --- | | 8:00 | Registration open (Pinnacle Foyer)  Continental Breakfast (Pinnacle Foyer) | |
| |  |  | | --- | --- | | 08:30 - 09:30 | Keynote III: Telecom policy: competition, spectrum, access and technology transitions  Speaker: Prof. Henning Schulzrinne (Columbia University & Chief Technology Officer, FCC)  Chair: Tarek F. Abdelzaher  Room: Pinnacle I/II | |
| |  |  | | --- | --- | | 09:30 - 10:00 | Coffee break | |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | 10:00 - 12:00 | Session 11  Software Defined Network (2)  (Pinnacle I/II) | Session 12  Social Networks and Computing  (Shaughnessy I) | Invited 7  Mobile Computing (2)  (Shaughnessy II) | Invited 8  Hot Topic in Networking  (Dundarave) | |
|  |
| |  |  | | --- | --- | | 12:00 - 13:30 | Lunch break | |
| |  |  | | --- | --- | | 13:30 - 15:00 | Pane III : Panel on Federal Funding for Research in Networking and  Beyond  Session Chair: Haiying Shen  Room: Pinnacle I/II | |
| |  |  | | --- | --- | | 15:00 - 15:30 | Coffee break | |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | 15:30 - 17:30 | Session 13 (Pinnacle I)    Poster Session  (Pinnacle II) | Session 14  Hot Topic in Networking  (Shaughnessy I) | Invited 9  Distributed System (2)  (Shaughnessy II) | Invited 10  Network Management  (Dundarave) | |
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Technical Program

# July 31 (Monday)

# 8:30-9:30

## Keynote I: Research Challenges and Solutions for IOT/CPS

Speaker: John A. Stankovic (The University of Virginia)

Chair: Haiying Shen

Room: Pinnacle I/II

# 10:00-12:00

## Session 1: Cognitive Radio Networks

Chair: Lijun Qian (CREDIT Center, PVAMU)

Room: Pinnacle I/II

* **Big RF Data Assisted Cognitive Radio Network Coexistence in 3.5GHz Band**

Oluwaseyi Omotere, Lijun Qian, Riku Jäntti, Miao Pan and Zhu Han

* **Channel Assignment in Cognitive Radio Networks: A Joint Utility and Stable Matching Approach**

Sayantan Chowdhury and Jianping Pan

* **Fade Duration Based Sleep Mode Activation in Dense Femtocell Cluster Networks**

Aklilu Gebremichail and Cory Beard

* **A QoE-driven Spectrum Decision Scheme for Multimedia Transmissions over Cognitive Radio Networks**

Ling Wang, Junjie Yang and Xiaojun Song

* **Replacing Free-Ranging Robots with Alternative Mobile Nodes**

Hugues Smeets, Matteo Ceriotti, Eduardo Ferrera and Pedro Jose Marron

## Session 2: Mobile Computing

Chair: Mohammad J. Abdel-Rahman (Virginia Tech)

Room: Shaughnessy I

* **Achieving Fair Spectrum Allocation for Co-Existing Heterogeneous Secondary User Networks**

Longfei Wu, Xiaojiang Du, Jie Wu and Bin Song

* **Mobility of Everything (MoE): An Integrated and Distributed Mobility Management**

Sangyup Han, Jaehyun Park, Haeun Kim, Jaehee Ha, Seungwon Shin, Sungwon Kang and Myungchul Kim

* **Two-Stage Mixed Queuing Model for Web Security Gateway Performance Evaluation**

Shichang Xuan, Dapeng Man, Wei Wang, Jiangchuan Zhang, Wu Yang and Xiaojiang Du

* **Analyzing Android Application in Real-time at Kernel Level**

Hao Ruan, Xiao Fu, Xuanyu Liu, Xiaojiang Du and Luo Bin

* **Online Algorithm for Wireless Backhaul HetNets with Advanced Small Cell Buffering**

Tri Nguyen, Wessam Ajib and Chadi Assi

## Session 3: Content Delivery Network

Chair: Kaliappa Ravindran (City University of New York)

Room: Shaughnessy II

* **Closing the Floodgate with Stateless Content-Centric Networking**

Christopher Wood, Cesar Ghali, Gene Tsudik and Ersin Uzun

* **NACID: A Neighborhood Aware Caching and Interest Dissemination in Content Centric Networks**

Amitangshu Pal and Krishna Kant

* **Game Theoretic D2D Content Sharing: Joint Participants Selection, Routing and Pricing**

Yujian Fang, Yuezhi Zhou, Xiaohong Jiang, Di Zhang and Yaoxue Zhang

* **An Incentive-based Mixed QoE Framework for Content Delivery to Smart**

Suiming Guo, Liang Chen and Dah Ming Chiu

* **MEET-IP: Memory and Energy Efficient TCAM-based IP Lookup**

Wenjun Li, Xianfeng Li and Hui Li

## Invited Session 1: Cloud Computing

Chair: Murat Demirbas (University at Buffalo, SUNY)

Room: Dundarave

* **LASER: A Deep Learning Approach for Speculative Execution and Replication of Deadline-Critical Jobs in Cloud**

Maotong Xu, Sultan Alamro, Tian Lan and Suresh Subramaniam

* **EA2S2: An Efficient Application-Aware Storage System for Big Data Processing in Heterogeneous Clusters**

Teng Wang, Jiayin Wang, Son Nam Nguyen, Zhengyu Yang, Ningfang Mi and Bo Sheng

* **Towards Financial Cloud Computing: Opportunities and Challenges**

David Irwin, Prateek Sharma, Supreeth Shastri and Prashant Shenoy

* **Wireless VR/AR with Edge/Cloud Computing**

Xueshi Hou, Yao Lu and Sujit Dey

* **GreenWay: Joint VM Placement and Topology Adaption for Green Data Center Networking**

Shenghui Yan, Shihan Xiao, Yuchi Chen, Yong Cui and Jiangchuan Liu

# 13:30-15:00

## Panel I: Age of the Internet of Things

Room: Pinnacle I/II

Panelists: Krishna Kant (Temple University); Sajal Das (MST); Lixia Zhang (UCLA); Rick Schlichting (ATT);

Moderator: Sajal Das.

# 15:30-17:30

## Session 4: Security, Privacy and Trust (1)

Chair: Erez Waisbard (Nokia Bell Labs)

Room: Pinnacle I/II

* **Incentive Mechanism Design in Mobile Crowd Sensing Systems with Budget Restriction and Capacity Limit**

Yu Zhou, Yuan Zhang and Sheng Zhong

* **An Efficient Privacy-Preserving Localization Algorithm for Pervasive Computing**

Guanghui Wang, Jianping Pan, Jianping He and Subin Shen

* **How Vulnerable Is the PublicWiFi AP You Are Using?**

Ruming Tang, Haibin Li, Kaixin Sui, Zihao Jin, Xiao Yang, Dan Pei and Beichuan Zhang

* **Efficient Parallelization of Regular Expression Matching for Deep Inspection**

Zhe Fu, Zhi Liu and Jun Li

* **WiTraffic: Low-cost and Non-intrusive Traffic Monitoring System Using WiFi**

Myounggyu Won, Shaohu Zhang and Sang Son

## Session 5: Datacenter Network

Chair: Angelo Sapello (Vencore Labs)

Room: Shaughnessy I

* **AutoPath: Harnessing Parallel Execution Paths for Efficient Resource Allocation in Multi-Stage Big Data Frameworks**

Han Gao, Zhengyu Yang, Janki Bhimani, Teng Wang, Jiayin Wang, Ningfang Mi and Bo Sheng

* **High Availability for VM Placement and a Stochastic Model for Multiple Knapsack**

Bochao Shen, Ravi Sundaram, Srinivas Aiyar, Karan Gupta, Abhinay Nagpal, Aditya Ramesh and Himanshu Shukla

* **Constraints-off Scheduling: A Simple Technique to Handle Soft Constraints in Cluster Scheduling**

Wenzhuo Li, Chuang Lin, Jie Hu and Xiaolan Liu

* **Tars: Timeliness-aware Adaptive Replica Selection for Key-Value Stores**

Wanchun Jiang, Liyuan Fang, Haiming Xie, Xiangqian Zhou and Jianxin Wang

* **Fair Work-Conserving Bandwidth Guarantees in Datacenters using MPTCP**

Baraa Ali and Kang Chen

## Invited Session 2: Social Network

Chair: Simone Silvestri (Missouri University of Science and Technology)

Room: Shaughnessy II

* **Identifying the social signals that drive online discussions: A case study of Reddit communities**

Benjamin Horne, Sibel Adali and Sujoy Sikdar

* **On the Root Cause of Dropout-Induced Contraction Process in D2D-Based Mobile Social Networks**

Sigit Pambudi, Wenye Wang and Cliff Wang

* **ForestStream: Accurate Measurement of Cascades in Online Social Networks**

Long Gong, Lanxi Huang, Paul Tune, Jinyoung Han, Chen-Nee Chuah, Matthew Roughan and Jun Xu

* **Connectivity-Aware Task Outsourcing and Scheduling in D2D Networks**

Zhen Hong, Zehua Wang, Wei Cai and Victor Leung

## Invited Session 3: Security, Privacy and Trust

Chair: Hailong Zhang (Chinese Academy of Sciences)

Room: Dundarave

* **Safeguarding Building Automation Networks: THE-Driven Anomaly Detector Based on Traffic Analysis**

Zhiyuan Zheng and Narasimha Reddy

* **Internet of Vehicles and Autonomous Connected Car - Privacy and Security Issues**

Joshua Joy and Mario Gerla

* **Private Information Diffusion Control in Cyber Physical Systems: A Game Theory Perspective**

Jingjing Wang, Chunxiao Jiang, Zhu Han, Tony Q. S. Quek and Yong Ren

* **CollabLoc: Privacy-Preserving Multi-Modal Localization via Collaborative Information Fusion**

Vidyasagar Sadhu, Dario Pompili, Saman Zonouz and Vincent Sritapan

* **The Computer for the 21st Century: Security & Privacy Challenges After 25 Years**

Leonardo B. Oliveira, Fernando Magno Quintao Pereira, Rafael Misoczki, Diego F. Aranha, Fabio Borges, Jie Liu

# August 1 (Tuesday)

# 8:30-9:30

## Keynote II: Protecting Web sites from the Internet of Compromised Things

Speaker: Bruce Maggs (Duke University)

Chair: Christian Poellabauer

Room: Pinnacle I/II

# 10:00-12:00

## Session 6: Software Defined Network (1)

Chair: Younghee Park (San Jose State University)

Room: Pinnacle I/II

* **Optimize Routing in Hybrid SDN Network with Changing Traffic**

Yingya Guo, Zhiliang Wang, Xia Yin, Xingang Shi and Jianping Wu.

* **Balancer: A Traffic-Aware Hybrid Rule Allocation Scheme in Software Defined Networks**

Dingmin Wang, Qing Li, Yong Jiang, Mingwei Xu and Guangwu Hu

* **TupleMerge: Building Online Packet Classifiers by Omitting Bits**

James Daly and Eric Torng

* **HyperV: A High Performance Hypervisor for Virtualization of the Programmable Data Plane**

Cheng Zhang, Yu Zhou, Abdul Basit Dogar, Jun Bi and Jianping Wu

* **Power-Aware Lightpath Management for SDN-Based Elastic Optical Networks**

Yu Xiong, Jin Shi, Yi Lv and George N. Rouskas

## Session 7: IoT and Multimedia

Chair: Hiroaki Hata (NTT Com Engineering, Japan)

Room: Shaughnessy I

* **Selection and Aggregation of Location Information Provisioning Services**

Filip Lemic, Vlado Handziski, Mladen Miksa, Jan Rabaey, John Wawrzynek and Adam Wolisz

* **Clock Drift Prediction for Fast Rejoin in 802.15.4e TSCH Networks**

Timothy Claeys, Franck Rousseau, Bernard Tourancheau and Andrzej Duda

* **Improving Optimization-based Rate Adaptation in DASH System**

Bo Wang, Xiaohui Luo and Fengyuan Ren

* **Optimising DASH over AQM-enabled Gateways using intra-chunk parallel retrieval (chunklets)**

Jonathan Kua and Grenville Armitage

* **Benefits of FlowQueue-based Active Queue Management for Interactive Online Games**

Grenville Armitage and Russell Collom

## Session 8: Communication Network

Chair: Wei Yu (Towson University)

Room: Shaughnessy II

* **Separating Communication Policies and Mechanisms to Make Protocol Layering Clearer**

Hiroki Watanabe, Takao Kondo, Kunitake Kaneko and Fumio Teraoka

* **Dynamically Reconfigurable Architecture for Fault-tolerant 2D Networks-on-Chip**

Poona Bahrebar, Dirk Stroobandt and Azarakhsh Jalalvand

* **PAS: A History Synchronization Protocol for Redundancy Elimination in Satellite IP Networks**

Leijun Huang, Hailin Feng and Ying Le

* **Decision Support for Computational Offloading by Probing Unknown Services**

Christian Meurisch, Julien Gedeon, The An Binh Nguyen, Fabian Kaup and Max Mühlhäuser

* **A Bloom Filter-Based Dual-Layer Routing Scheme in Large-Scale Mobile Networks**

Weichao Gao, James Nguyen, Yalong Wu, William Hatcher and Wei Yu

## Invited Session 4: Mobile Computing (1)

Chair: Rahmira Rufus (North Carolina A&T State University)

Room: Dundarave

* **Memento: An Emotion Driven Lifelogging System with Wearables**

Shiqi Jiang, Pengfei Zhou, Zhenjiang Li and Mo Li

* **The Sticking Heartbeat Aperture Resynchronization Protocol**

Santiago Gonzalez, Tracy Camp and Katia Jaffrès-Runser

* **SonarBeat: Sonar Phase for Breathing Beat Monitoring with Smartphones**

Xuyu Wang, Runze Huang and Shiwen Mao

* **Enjoy the Silence: Noise Control with Smartphones**

Taesik Gong, Jun Hyuk Chang, Joon-Gyum Kim, Soowon Kang, Donghwi Kim and Sung-Ju Lee

* **Validation of a New Model-Free Signal Processing Method for Gait Feature Extraction Using Inertial Measurement Units to Diagnose and Quantify the Severity of Parkinson’s Disease**

Ali Akbari, Roozbeh Jafari and Richard B. Dewey Jr

# 13:30-15:00

## Panel II: Cloud Scale Big Data Analytics

Room: Pinnacle I/II

Panelists: Pei Zhang (CMU); Vanish Talwar (Nutanix); Indranil Gupta (UIUC); Christopher Stewart (Ohio State University); Jeff Kephart (IBM);

Moderator: Chris Stewart.

# 15:30-17:30

## Session 9: Security, Privacy and Trust (2)

Chair: Badis HAMMI (Telecom ParisTech, France)

Room: Pinnacle I/II

* **Fault-Tolerant and Secure Data Transmission Using Random Linear Network Coding**

Pouya Ostovari and Jie Wu

* **It's About Time: Securing Broadcast Time Synchronization with Data Origin Authentication**

Robert Annessi, Joachim Fabini and Tanja Zseby

* **An Attribute & Network Coding-based Secure Multicast Protocol for Firmware Updates in Smart Grid AMI Networks**

Samet Tonyali, Kemal Akkaya, Nico Saputro and Xiuzhen Cheng

* **EvilDirect: A New Wi-Fi Direct Hijacking Attack and Countermeasures**

Ala Altaweel, Radu Stoleru and Guofei Gu

* **RealDroid: Large-Scale Evasive Malware Detection on “Real Devices”**

Lang Liu, Yacong Gu, Qi Li and Purui Su

## Session 10: Cloud and Edge Computing

Chair: Kewei Sha (University of Houston - Clear Lake)

Room: Shaughnessy I

* **LB-MAP: Load-Balanced Middlebox Assignment in Policy Driven Cloud Data Centers**

Manar Alqarni, Alexander Ing and Bin Tang

* **Proximity-aware IaaS for Edge Computing Environment**

Hiroaki Yamanaka, Eiji Kawai, Yuuichi Teranishi and Hiroaki Harai

* **EDOS: Edge Assisted Offloading System for Mobile Devices**

Hank Harvey, Ying Mao, Yantian Hou and Bo Sheng

* **Energy-efficient Load-balanced Heterogeneous Mobile Cloud**

Chien An Chen, Radu Stoleru and Geoffrey Xie

* **A Highly Adaptive and Energy-Efficient Optical Interconnect for On-Board Server Communications**

Waltenegus Dargie, David Schoniger, Xin An, Laszlo Szilagyi, Ronny Henker and Frank Ellinger

## Invited Session 5: Communication Network

Chair: Kang Chen (Southern Illinois University)

Room: Shaughnessy II

* **Bounds on the Age of Information for Global Channel State Dissemination in Fully-Connected Networks**

Shahab Farazi, Andrew Klein and Donald Brown

* **Achieving Spectrum Efficient Communication Under Cross-Technology Interference**

Shuai Wang, Zhimeng Yin, Song Min Kim and Tian He

* **VIP Lanes: High-speed Custom Communication Paths for Authorized Flows**

James Griffioen, Ken Calvert, Zongming Fei, Sergio Rivera, Jacob Chappell, Mami Hayashida, Charles Carpenter, Song Yongwook and Hussamuddin Nasir

* **Leveraging Wireless Virtualization for Network Capacity Optimization in HetNets**

Danda Rawat, Taylor White, Min Song and Chongqing Zhang

* **CityScape: A Metro-area Spectrum Observatory**

Sumit Roy, Mark McHenry, Anish Ashok, Shyam Kannam, K. S. Shin, G. Vigil and D. Aragon

## Invited Session 6: Distributed System (1)

Chair: Poona Bahrebar (Ghent University, Belgium)

Room: Dundarave

* **BASIC Codes for Distributed Storage Systems**

Hanxu Hou and Yunghsiang Han

* **Experiments and Analyses of Data Transfers Over Wide-Area Dedicated Connections**

Nageswara Rao, Qiang Liu, Satyabrata Sen, Jesse Hanley, Ian Foster, Rajkumar Kettimuthu, Chase Wu, Daqing Yun, Don Towsley and Gayane Vardoyan

* **Resource Allocation for Pragmatically-assisted Quality of Information-aware Networking**

James Edwards, Rebecca Passonneau, Taylor Cassidy and Thomas La Porta

* **Energy-aware scheduling strategies to support QoS-requirements in large scale networks**

Qun Yu and Taieb Znati

* **PASS: Content Pre-staging through Provider Accessible Storage Service**

Xueheng Hu and Aaron Striegel

# August 2 (Wednesday)

# 8:30-9:30

## Keynote III: Telecom policy: competition, spectrum, access and technology transitions

Speaker: Henning Schulzrinne (Columbia University)

Chair: Tarek F. Abdelzaher

Room: Pinnacle I/II

# 10:00-12:00

## Session 11 Software Defined Network (2)

Chair: Nageswara S.V. Rao (Oak Ridge National Laboratory)

Room: Pinnacle I/II

* **Detecting Link Fabrication Attacks in Software-Defined Networks**

Dylan Smyth, Sean McSweeney, Donna O'Shea and Victor Cionca

* **Periodic Scheduling of Deadline-constrained Variable Slot-Bandwidth Reservations for Scientific Collaboration**

Yongqiang Wang, Chase Wu and Aiqin Hou

* **Robust Controller Placement and Assignment in Software-defined Cellular Networks**

Mohammad Abdel-Rahman, Emadeldin Mazied, Kory Teague, Allen MacKenzie and Scott Midkiff

* **Quantifying the Scalability of Software Defined Networks with Dynamic Topology**

Venkatesh Ramaswamy

* **Machine-learning based Threat-aware System in Software Defined Networks** Chungsik Song, Younghee Park, Keyur Golani, Youngsoo Kim, Kalgi Bhatt and Kunal Goswami

## Session 12 Social Networks and Computing

Chair: Suporn Pongnumkul (NECTEC, Thailand)

Room: Shaughnessy I

* **Friend Recommendation in Online Social Networks: Perspective of Social Influence Maximization**

Huanyang Zheng and Jie Wu

* **Lilliput: A Storage Service for Lightweight Peer-to-Peer Online Social Networks**

Thomas Paul, Niklas Lochschmidt, Anwitaman Datta, Hani Salah and Thorsten Strufe

* **Cinema or Restaurant: A Joint Geo- and Behavioral-similarity Approach for AP Categorization**

Liting Zhao and Zhi Wang

* **GLFR: A Generalized LFR Benchmark for Testing Community Detection Algorithms**

Ba-Dung Le, Hung Nguyen, Hong Shen and Nickolas Falkner

* **Realistic Models for Characterizing the Performance of Unmanned Aerial Vehicles**

Ken Goss, Riccardo Musmeci and Simone Silvestri

## Invited Session 7 Mobile Computing (2)

Chair: Christian Meurisch (TU Darmstadt, Germany)

Room: Shaughnessy II

* **A Simple Solution to Scale-Free Internet Host Mobility**

J.J. Garcia-Luna-Aceves and Spencer Sevilla

* **Hybrid Indoor Tracking Using Crowdsourced Measurements**

Zafer Vatansever and Maite Brandt-Pearce

* **Unveiling Access Point Signal Instability in WiFi-based Passive Sensing**

Giuseppe Bianchi, Simone Di Domenico, Mauro De Sanctis, Laura Liberati, Valerio Perrotta and Ernestina Cianca

* **Over-The-Air TV Detection using Mobile Devices**

Mohamed Ibrahim, Marco Gruteser, Khaled Harras and Moustafa Youssef

* **A Sensor Network for Real-Time Volcano Tomography: System Design and Deployment**

Dennis Phillips, Mohammad-Mahdi Moazzami, Guoliang Xing and Jonathan Lees

## Invited Session 8: Hot Topic in Networking

Chair: Sonia Fahmy (Purdue University)

Room: Dundarave

* **Towards High Fidelity Network Emulation**

Lianjie Cao, Xiangyu Bu, Sonia Fahmy and Siyuan Cao

* **Downlink Channel Estimation in Massive MIMO FDD Systems Using Block-ADMM**

Ali Cirik, Naveen Mysore Balasubramanya and Lutz Lampe

* **Design of a Heterogeneous Cellular Network with a Wireless Backhaul**

Meghana Bande and Venugopal Veeravalli

* **Anomaly Free on Demand Stateful Software Defined Firewalling**

Zainul Din and Jaudelice de Oliveira

# 13:30-15:00

## Panel III: Panel on Federal Funding for Research in Networking and Beyond

Room: Pinnacle I/II

Panelists: Vipin Chaudhary (US NSF);

Richard Brown (US NSF);

Reginald Hobbs (US Army Research Lab);

Session Chair: Haiying Shen.

# 15:30-17:30

## Session 13: Wireless Network

Chair: Myounggyu Won (South Dakota State University)

Room: Pinnacle I

* **How Much Are Your Neighbors Interfering with Your WiFi Delay?**

Changhua Pei, Youjian Zhao, Guo Chen, Yuan Meng, Yang Liu, Ya Su, Yaodong Zhang, Ruming Tang and Dan Pei

* **LazyAS: Client-Transparent Access Selection in Dual-band WiFi**

Jun Zhang, Guangxing Zhang, Qinghua Wu, Lei Song and Gaogang Xie

* **TANDEM: Prioritizing Wireless Communication for Robust Industrial Process Control**

Roman Naumann, Stefan Dietzel, Laura Wartschinski, Ben Schumacher and Björn Scheuermann

* **Channel Quality Correlation based Channel Probing in Multiple Channels**

Yu Zhao and Tingting Yu

* **Multi-flow Glossy: Physical-layer Network Coding Meets Embedded Wireless Systems**

Abdelrahman Abdelkader, Johannes Richter, Eduard Jorswieck and Marco Zimmerling

## Session 14: Hot Topic in Networking

Chair: Geethapriya Thamilarasu (University of Washington Bothell)

Room: Shaughnessy I

* **nTorrent: Peer-to-Peer File Sharing in Named Data Networking**

Spyridon Mastorakis, Alexander Afanasyev, Yingdi Yu and Lixia Zhang

* **Constant Time Weighted Frequency Estimation for Virtual Network Functionalities**

Gil Einziger, Marcelo Caggiani Luizelli and Erez Waisbard.

* **Service-Concatenation Routing with Applications to Network Functions Virtualization**

Shireesh Bhat and George N. Rouskas

* **An Approach for Reducing Energy Consumption in Dependable Virtual Network Embedding**

Victor Lira, Eduardo Tavares and Meuse Oliveira Jr.

## Invited Session 9: Distributed System (2)

Chair: Haiying Shen (University of Virginia)

Room: Shaughnessy II

* **A Study and Comparison of Human and Deep Learning Recognition Performance under Visual Distortions**

Samuel F. Dodge and Lina J. Karam

* **Multi-mode Low-latency Software-defined Error Correction for Data Centers**

Fakhreddine Ghaffari, Ali Akoglu, Bane Vasic and David Declercq

* **A Comparison of Distributed Machine Learning Platforms**

Kuo Zhang, Salem Alqahtani and Murat Demirbas

* **Uniform Circle Formation by Asynchronous Robots: A Fully-Distributed Approach**

Shan Jiang, Jiannong Cao, Jia Wang, Milos Stojmenovic and Julien Bourgeois

* **Cider: A Case for Block Level Variable Redundancy on a Distributed Flash Array**

Sharath Chandrashekhara, Madhusudhan R. Kumar, Mahesh Venkataramaiah and Vipin Chaudhary

## Invited Session 10: Network Management

Chair: Fuchun Joseph Lin (National Chiao Tung University)

Room: Dundarave

* **Service Placement in Complex Active Networks**

Hatem Ibn Khedher, Hossam Afifi and Ahmed Kamal

* **Opportunities in Augmented Reality over Named Data Networking (NDN)**

Jeff Burke

* **Towards automated intelligence in 5G systems**

Yuanjie Li, Qianru Li, Songwu Lu, Chunyi Peng, Taqi Raza, Zhaowei Tan, Zhehui Zhang

* **Context-Aware Task Offloading for Wearable Devices**

Yi Yang, Yeli Geng, Li Qiu, Wenjie Hu and Guohong Cao

## Poster Session

Chair: Lu Su (The State University of New York, Buffalo)

Room: Pinnacle II

* **Joint Optimization of Task Placement and Routing in Minimizing Inter-DC Coflow Completion Time**

Yingya Guo, Zhiliang Wang, Xia Yin, Xingang Shi, Jianping Wu

* **Mean Holding Time in Sync of Lossy IEEE 802.15.4e TSCH Networks for Industrial IOT Applications**

Ho-Ting Wu, Kai-Wei Ke, Po-Hung Chen, Chun-Ting Lin, Ming-Che Chen

* **DisVis 2.0: Decision Support for Rescue Missions Using Predictive Disaster Simulations with Human-centric Models**

Christian Meurisch, The An Binh Nguyen, Martin Kromm, Andrea Ortiz, Ragnar Mogk, Max Mühlhäuser

* **Slotted Aloha for Cognitive Radio User and Its Tagged User Analysis**

Maher Bouidani, Inoussa Mouiche

* **Building a Lightweight Testbed Using Devices in Personal Area Network**

Qiaozhi Xu, Junxing Zhang

* **Enhancing Usability for the Wireless Charging Vehicle Simulator**

Shuo-Han Chen, I-Ju Wang, Tseng-Yi Chen, Hsin-Wen Wei, Tsan-Sheng Hsu, Wei-Kuan Shih

* **Elasticity Guarantee for Virtual Machine Placement in Cloud Data Center Networks**

Shuaibing Lu, Zhiyi Fang, Jie Wu

* **Improving WiFi Network Performance Under MPTCP Users**

Mijanur Palash, Kang Chen

* **Effects of GPS Error on Geographic Routing**

Justin Rohrer

* **Evaluating Different Pricing Algorithms for a Flexible Optical Choice-based Network**

Robinson Udechukwu, Rudra Dutta, Takaya Miyazawa, Hiroaki Harai

* **Middleware for NICs in Bare PC Applications**

Faris Almansour, Ramesh Karne, Alexander Wijesinha, Hamdan Alabsi, Rasha Almajed

* **Upgrading Wireless Home Routers as Emergency Cloudlet and Secure DTN Communication Bridge**

Christian Meurisch, The An Binh Nguyen, Julien Gedeon, Florian Kohnhäuser, Milan Schmittner, Stefan Niemczyk, Stefan Wullkotte, Max Mühlhäuser

* **Optimal PPDU Duration Algorithm for VHT MU-MIMO Systems**

Aitizaz Uddin Syed, Mohsin Iftikhar, Ljiljana Trajkovic

Workshop Program Overview

|  |  |  |  |
| --- | --- | --- | --- |
| **August 3 (Thursday) - Workshops** | | | |
| 7:30am - Registration Desk/Continental Breakfast (Pinnacle Foyer) | | | |
| 08:00 - 12:00 | RM (Pinnacle I)  VENITS | RM (Pinnacle II)  WiMAN | RM (Pinnacle III)  IoTPST |
| 12:00 - 13:30 | Lunch break | | |
| 13:30 - 17:00 | RM (Pinnacle I)  PSTBT | RM (Pinnacle II)  NSAA | RM (Pinnacle III)  IioTCom |

Integrated Workshop Schedule

# Aug 3 (Thursday)

# 8:00-12:00

**VENITS Workshop:**

Chair: Carlos T. Calafate and Francisco Martinez

Welcome

**Workshop Keynote**: Impact of IPv6 on IoV – VoI. Latif Ladid (Université du Luxembourg)

* **QoS-oriented Management of Automobile Cruise Control Processes**

A Adiththan and K Ravindran

* **Disseminating Large Data in Vehicular Ad Hoc Networks**

Dp Tejas

* **An Android ITS Driving Safety Application Based on Vehicle-to-Vehicle (V2V) Communications**

Seilendria Ardityarama Hadiwardoyo, Subhadeep Patra, Carlos Tavares Calafate, Juan-Carlos Cano and Pietro Manzoni

* **Secure and Anonymous Vehicle Access Control System to Traffic-Restricted Urban Areas**

Magdalena Payeras-Capellà, Jordi Castellà-Roca, Macià Mut Puigserver, Alexandre Viejo and Carles Anglès-Tafalla

**Break**

* **Securing PKI Requests for C-ITS systems**

Jean Philippe Monteuuis, Badis Hammi, Eduardo Salles Daniel, Houda Labiod, Rémi Blancher, Erwan Abalea and Brigitte Lonc

* **Dynamic Small Cell Management for Connected Cars Communications**

Julio A. Sanguesa, Johann M. Marquez-Barja, Piedad Garrido and Francisco J. Martinez

* **Bio-inspired on demand routing protocol for Unmanned Aerial Vehicles**

Bahloul Nour El Houda, Boudjit Saadi, Abdennebi Marwen and Boubiche Djallel Eddine

Closing

**WiMAN Workshop:**

Chair: Christian Poellabauer

Welcome

* **Adaptive Burst Transmission Scheme for Wireless Sensor Networks**

Zeeshan Ansar and Waltenegus Dargie

* **Wireless Interference Prediction for Embedded Health Devices**

Jiangmin Yu, Michael Farcasin and Eric Chan-Tin

* **User Association Algorithm for Throughput Improvement in High-Density Wireless Networks**

Omneya Issa, Ying Ge, Aizaz Chaudhry and Bernard Doray

**Break**

* **Enhanced AODV: Detection and Avoidance of Black Hole Attack in Smart Metering Network**

Md Raqibull Hasan, Yanxiao Zhao, Guodong Wang, Yu Luo and Robb Winter

* **Analysis of Analog Network Coding noise in Multiuser Cooperative Relaying for Spatially Correlated Environment**

Sam Darshi and Samar Shailendra

* **On the Data Aggregation Point Placement in Smart Meter Networks**

Guodong Wang, Yanxiao Zhao, Jun Huang and Robb Winter

**Break**

* **Incremental SDN-Enabled Switch Deployment for Hybrid Software-Defined Networks**

Meitian Huang and Weifa Liang

* **Detecting Byzantine Attacks in Self-Organizable Networks by a Reputation-Based Cooperative Spectrum Sensing**

Francesco Benedetto, Gaetano Giunta, A. Tedeschi and P. Coronas

* **Coverage Algorithms for WiFO: A Hybrid FSO-WiFi Femtocell Communication System**

Yang Zhang, Yu-Jung Chu and Thinh Nguyen

Closing

**IoTPST Workshop:**

Chair: George Rouskas

Welcome

* **Template Attack vs. Stochastic Model: An Empirical Study on the Performances of Profiling Attacks in Real Scenarios**

Hailong Zhang, Yongbin Zhou and Baofeng Li

* **Lightweight Framework for Reliable Job Scheduling in Heterogeneous Clouds**

Muhammed Bello Abdulazeez, Pawel Garncarek and Prudence W.H. Wong

* **A Secure Two-Party Computation Based Privacy-Preserving Smart Metering Scheme**

Haipeng Qu, Wenhong Sun, Xi-Jun Lin, Peng Shang, Xiaoshuai Zhang, Mingjian Jiang, Youxin Fang and Yanyong Zhu

**Break**

* **Equivalence Checking of Java Methods - Toward Ensuring IoT Dependability**

Kozo Okano, Satoshi Harauchi, Toshifusa Sekizawa, Shinpei Ogata and Shin Nakajima

* **Preventing Misuse of Duplicate Certificates in IoT/M2M Systems**

Yu-Hao Hsu and Fuchun Joseph Lin

* **Machine-learning Classifiers for Security in Connected Medical Devices**

Sida Gao and Geethapriya Thamilarasu

**Break**

* **Privacy Risks for Multi-Criteria Collaborative Filtering Systems**

Alper Yargıç and Alper Bilge

* **Security Analysis based on Petri Net for Separation Mechanisms in Smart Identifier Network**

Linyuan Yao, Ping Dong, Xiaojiang Du and Hongke Zhang

* **Augmenting Security of Internet-of-Things Using Programmable Network-Centric Approaches: A Position Paper**

Hammad Iqbal, Jamie Ma, Qing Mu, Venkatesh Ramaswamy, Gabby Raymond, Daniel Vivanco and John Zuena

* **An Overview of Access Control Mechanisms for Internet of Things**

Kewei Sha and Mousa Alramadhan

Closing

# 13:30-17:00

**PSTBT Workshop:**

Chair: Victoria Lemieux

Welcome

* **CoC: Secure Supply Chain Management System based on Public Ledger**

Lei Xu, Lin Chen, Zhimin Gao, Yang Lu and Weidong Shi

* **Long-term Public Blockchain: Resilience against Compromise of Underlying Cryptography**

Masashi Sato and Shin'Ichiro Matsuo

* **Performance Analysis of Private Blockchain Platforms in Varying Workloads**

Suporn Pongnumkul, Chaiyaphum Siripanpornchana and Suttipong Thajchayapong

* **Legally Speaking: Smart Contracts, Archival Bonds, and Linked Data**

Darra Hofman

**Break**

**Workshop Keynote**: BSafe Network: Purpose, Development and Operation

Shin’Ichiro Matsuo (MIT Media Lab)

* **The application of blockchain technology in e-government in China**

Heng Hou

* **Automated labeling of unknown contracts in Ethereum**

Robert Norvill, Beltran Borja Fiz Pontiveros, Irfan Awan, Andrea Cullen and Radu State

* **Semantic Interoperability on a Blockchain: Reducing Uncertainty and Complexity in Value Exchange**

Marek Laskowski and Henry Kim

* **Syscoin: A Peer-to-Peer Electronic Cash System with Blockchain-Based Services for E-Business**

Jagdeep Sidhu

Closing

**NSAA Workshop:**

Chair: Li Yang

Welcome Address

* **A New Approach to Online, Multivariate Network Traffic Analysis**

Jinoh Kim and Alex Sim

* **A Study on Log Analysis Approaches Using Sandia Dataset**

Mir Mehedi Pritom, Chuqin Li, Bill Chu and Xi Niu

* **The Design of Cyber Threat Hunting Games: A Case Study**

Md Nazmus Sakib Miazi, Mir Mehedi Pritom, Mohamed Shehab, Bill Chu and Jinpeng Wei

**Break**

* **Comparison of Virtualization Algorithms and Topologies for Data Center Networks**

Hanene Ben Yedder, Qingye Ding, Umme Zakia, Zhida Li, Soroush Haeri and Ljiljana Trajkovic

* **Concatenating Unprotected Internet of Things Network Event-Driven Data to Obtain End-User Information**

Rahmira Rufus and Albert Esterline

* **Application of Learning Using Privileged Information(LUPI): Botnet Detection**

Angelo Sapello, Constantin Serban, Ritu Chadha and Rauf Izmailov

**Break**

* **Hands-on Learning for Computer Network Security with Mobile Devices**

Kai Qian, Yong Shi, Lixin Tao and Ying Qian

* **A Secure Mobile Cloud Photo Storage System**

David Schwab, Li Yang, Kathy Winters, Matthew Jallouk, Emile Smith and Adam Claiborne

Closing

**IioTCom Workshop:**

Chair: Ing. Patrick-Benjamin Bök

Welcome

* **A Bridging VPN for Connecting Wireless Sensor Networks to Data Centers**

Hiroaki Hata

* **Fault and Performance Management in Multi-Cloud based NFV using Shallow and Deep Predictive Structures**

Lav Gupta, Mohammed Samaka, Raj Jain, Aiman Erbad, Deval Bhamare and H. Anthony Chan

* **Monotonic Optimization for Power Assignment in Two-Way Cognitive Radio Networks with Shared-band Amplify-and-Forward Relays**

Udit Pareek and Daniel Lee

**Break**

* **New locating method based on improved Niculecu Dv-distance**

Degan Zhang, Yameng Tang and Jie Chen

* **Video Streaming Schemes for Industrial IoT**

Hajime Kanzaki, Kevin Schubert and Nicholas Bambos

* **Analysis of the Scope of Dynamic Power Management in Emerging Server Architectures**

Markus Hähnel, Waltenegus Dargie and Alexander Schill

Closing

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