

# ICNC 2014 Technical Program

Honolulu, Hawaii, USA

Feb. 3-6, 2014

<http://www.conf-icnc.org>



## Monday, February 3

10:00 - 12:00

### **Distinguished Lectures I : Current and Future Challenges in Application-Centric Networking**

Speaker: John Apostolopoulos, CTO and Vice President, Cisco, USA

Room: South Pacific Ballroom 1

Chair: Guan-Ming Su (Dolby Lab, USA)

### **SPAN: Sensor, Peer-to-peer and Social Networks**

Room: South Pacific Ballroom 2

Chair: Narasimha K Shashidhar (Sam Houston State University, USA)

### ***A DoS-Resilient Enhanced Two-Factor User Authentication Scheme in Wireless Sensor Networks***

Fei Wang (Institute of Computing Technology, Chinese Academy of Sciences & University of Chinese Academy of Sciences, P.R. China); Yujun Zhang (Institute of Computing Tech. Chinese Academy of Sciences, P.R. China); Yongjun Xu (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Lin Wu (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Boyu Diao (Institute of Computing Technology, Chinese Academy of Sciences & University of Chinese Academy of Sciences, P.R. China)

### ***Compression/Transmission Power Allocation In Multimedia Wireless Sensor Networks***

Ming Yang (Southern Polytechnic State University, USA); Lei Chen (Sam Houston State University, USA); Weiqiang Xiong (Southern Polytechnic State University, USA)

### ***Generative Models for Cellular Social Networks***

Deepjyoti Deka (University of Texas, USA); Sriram Vishwanath (University of Texas Austin, USA)

***Distributed Dynamic Channel Assignment in Wireless Networks***

Chadi Kari (Bridgewater State University, USA); Narasimha K Shashidhar (Sam Houston State University, USA); Sotirios Kentros (University of Connecticut, USA)

**CNC I: Wireless Networking**

Room: South Pacific Ballroom 3

Chair: Annamalai Annamalai (Prairie View A&M University, USA)

***Energy Detection of Unknown Deterministic Signals in  $k\text{-}\hat{1}/4$  and  $\hat{1}\text{-}\hat{1}/4$  Generalized Fading Channels with Diversity Receivers***

Annamalai Annamalai (Prairie View A&M University, USA); Abiodun Olaluwe (Prairie View A&M University, USA)

***Load Balancing Mechanism for Proxy Mobile IPv6 Networks: An IP Multicast Perspective***

Tien-Thanh Nguyen (EURECOM, France); Christian Bonnet (EURECOM, France)

***Full-duplex Cooperative Transmission Scheduling in Fast-fading MIMO Relaying Wireless Networks***

Qian Gao (University of California, Riverside, USA); Gang Chen (University of California Riverside, USA); Linchao Liao (University of California, Riverside, USA); Yingbo Hua (University of California, Riverside, USA)

***OTRA-THS MAC to Reduce Power Outage Data Collection Latency in a Smart Meter Network***

Shravan Garlapati (Virginia Polytechnic and State University, USA); Phani Teja Kuruganti (Oak Ridge National Laboratory, USA); Michael Buehrer (Virginia Tech, USA); Jeffrey Reed (Virginia Tech, USA)

**CNC II: Communications Security**

Room: South Pacific Ballroom 4

Chair: Falko Dressler (University of Innsbruck, Austria)

***PHY-Layer Authentication Using Hierarchical Modulation and Duobinary Signaling***

Vireshwar Kumar (Virginia Tech, USA); Jung-Min Park (Virginia Polytechnic Institute and State University, USA); T. Charles Clancy (Virginia Tech, USA); Kaigui Bian (Peking University, P.R. China)

***PBC: A Novel Method for Identifying QQ Traffic***

Xiaoxian Chen (Harbin University of Science and Technology, P.R. China); Zhenlong Yuan (Tsinghua University, P.R. China); Yibo Xue (Tsinghua university, P.R. China)

***Adaptive Load Allocation for Combining Anomaly Detectors Using Controlled Skips***

Mario Berger (Barracuda Networks, Austria); Felix Erlacher (University of Innsbruck, Austria); Christoph Sommer (University of Innsbruck, Austria); Falko Dressler (University of Innsbruck, Austria)

***An efficient flow-based botnet detection using supervised machine learning***

Matija Stevanovic (Aalborg University, Denmark); Jens M. Pedersen (Aalborg University, Denmark)

***Social Network Privacy Measurement and Simulation***

Yong Wang (Dakota State University, USA); Raj K Nepali (Dakota State University, USA); Jason Nikolai (Dakota State University, USA)

***A Comprehensive Framework for Detecting and Preventing VoIP Fraud and Misuse***

Dirk Hoffstadt (University of Duisburg-Essen, Germany); Erwin P. Rathgeb (Universität Duisburg-Essen, Germany); Matthias Liebig (ISACO GmbH, Germany); Ralf Meister (GeNUA mbH, Germany); Yacine Rebahi (Fraunhofer Institut Fokus, Berlin, Germany); Thanh Quang Tran (Technische Universität Berlin & Fraunhofer FOKUS, Germany)

**CNC III: Next Generation Networking**

Room: Suite Sea Pearl 3-4

Chair: Brendan Mumeey (Montana State University, USA)

***Coverage Aspects of Cooperative Multi-hop Line Networks in Correlated Shadowed Environment***

Mudasar Bacha (SEECS, National University of Sciences and Technology, Pakistan); Syed Ali Hassan (National University of Sciences and Technology, Pakistan)

***Minimizing Channel Rental Costs for Topology Control in Multihop Wireless Networks***

Ivan Judson (Montana State University, USA); Brendan Mumeey (Montana State University, USA)

***Proposal of ad-hoc multicasting based on OFDM cooperative communication***

Katsuhiko Naito (Mie University, Japan); Kazuo Mori (Mie University, Japan); Hideo Kobayashi (Mie University, Japan)

***Opportunistic Large Array with Limited Participation: An Energy-Efficient Cooperative Multi-Hop Network***

Rafay Iqbal Ansari (SEECS, National University of Sciences and Technology, Pakistan); Syed Ali Hassan (National University of Sciences and Technology, Pakistan)

***On Least Expected Transmissions Multicasting in Wireless Networks***

Christos Papageorgiou (University of Patras, Greece); Kostas Christodoulopoulos (University of Patras, Greece); Nikolaos D. Doulamis (National Technical University of Athens, Greece); Emmanouel Varvarigos (University of Patras & Computer Technology Institute, Greece)

***SMP-Sync: Time Synchronization using Seawater Movement Pattern for Underwater Wireless Networks***

Sungryul Kim (Pusan National University, Korea); Younghwan Yoo (Pusan National University, Korea)

**13:30 - 15:30**

**Distinguished Lectures II: 3D Technology Challenges: Capture, Compression, and Display**

Speaker: Panos Nasiopoulos, Dolby Professor, University of British Columbia, Canada

Room: South Pacific Ballroom 1

Chair: Guan-Ming Su (Dolby Lab, USA)

**EWNP I: Emerging Wireless Networks and Protocols I**

Room: South Pacific Ballroom 2

Chair: Ching-Lung Chang (National Yunlin University of Science and Technology, Taiwan)

***A Dual-Mode Message Delivery System with Time Constrained Paging Mechanism***

Tsang-Ling Sheu (National Sun Yat-Sen University, Kaohsiung, Taiwan); Hsu-Ching Cheng (National Sun Yat-Sen University, Taiwan)

***Packet Loss Consideration of P2P-based VoD System with Interleaved Video Frame Distribution***

Ching-Lung Chang (National Yunlin University of Science and Technology, Taiwan)

***Genetic Algorithm-Based Energy Efficient Multicast Scheduling for WiMAX Relay Networks***

Zi-Tsan Chou (National Sun Yat-Sen University, Taiwan); Yu-Jen Hou (National Sun Yat-Sen University, Taiwan)

***Design and Implementation of Sequential Repair and Backup Routing Protocol for Wireless Mesh Network***

Jih-Ching Chiu (National Sun Yat-Sen University, Taiwan); Kai-Ming Yang (National Sun Yat-sen University, Taiwan)

***Quick Event Detection and Reporting in Low-Duty-Cycled Wireless Sensor Networks***

Meng-Shiuan Pan (Tamkang University, Taiwan); Ping-Lin Liu (Tamkang University, Taiwan)

**CNC IV: Wireless Ad Hoc Networks**

Room: South Pacific Ballroom 3

Chair: Toshiaki Miyazaki (The University of Aizu, Japan)

***A Software Defined Wireless Sensor Network***

Toshiaki Miyazaki (The University of Aizu, Japan); Shoichi Yamaguchi (The University of Aizu, Japan); Koji Kobayashi (The University of Aizu, Japan); Jyunji Kitamichi (University of Aizu, Japan); Song Guo (The University of Aizu, Japan); Tsuneo Tsukahara (The University of Aizu, Japan); Takafumi Hayashi (University of Aizu, Japan)

***Distributed RSS-based Localization in Wireless Sensor Networks Using Convex Relaxation***

Slavisa Tomic (Universidade Nova de Lisboa & Faculdade de Ciencia e Tecnologia, Portugal); Marko Beko (ULHT/UNINOVA & UNINOVA, Caparica, Portugal); Rui Dinis (Instituto de Telecomunicacoes & FCT-UNL, Portugal); Miroslava Raspopovic (Belgrade Metropolitan University, Serbia)

***Reliable Multihop Intra-Cluster Communication for Wireless Sensor Networks***

Lina Xu (University College Dublin, Ireland)

***Using Network Traffic to Infer Power Levels in Wireless Sensor Nodes***

Lanier Watkins (Johns Hopkins University Information Security Institute, USA); Garth V Crosby (Southern Illinois University Carbondale, USA); Afsana Sharmin (Southern Illinois University Carbondale, USA)

***Use of Radio Propagation Maps in a Single Moving Beacon Assisted Localization in MANETs***

Joseph Miles (University of Wyoming, USA); Suresh Muknahallipatna (University of Wyoming, USA); Robert Kubichek (University of Wyoming, USA); John McInroy (University of Wyoming, USA); Harish Muralidhara (University of Wyoming, USA)

**CNC V: Signal Processing for Communications and Data Storage**

Room: South Pacific Ballroom 4

Chair: J Greg Nash (Centar LLC, USA)

***High-Throughput Programmable Systolic Array FFT Architecture and FPGA Implementations***

J Greg Nash (Centar LLC, USA)

***Towards Easier Compliance with Out-of-Band Emissions Regulations***

Ahmed Selim (Trinity College, Dublin, Ireland); Arman Farhang (CTVR Trinity College, Ireland); Linda Doyle (Trinity College Dublin, Ireland)

***An ultra-high speed OFDMA system for optical access networks***

Michael Dreschmann (Karlsruhe Institute of Technology, Germany); Joachim Meyer (Karlsruhe Institute of Technology (KIT), Germany); Philipp Schindler (Karlsruhe Institute of Technology, Germany); Rene Schmogrow (Karlsruhe Institute of Technology, Germany); Juerg Leuthold (Karlsruhe Institute of Technology (KIT), Germany); Wolfgang Freude (Karlsruhe Institute of Technology (KIT) & Institute of Photonics and Quantum Electronics, Germany); Juergen Becker (University of Karlsruhe, Germany)

***DS-Dedupe: A Scalable, Low Network Overhead Data Routing Algorithm for Inline Cluster Deduplication System***

Zhen Sun (National University of Defense Technology, P.R. China); Nong Xiao (National University of Defense Technology, P.R. China); Fang Liu (National University of Defence Technology, P.R. China); Fu Yinjin (Co-author, P.R. China)

***PXFS: A Persistent Storage Model for Extreme Scale***

Shuangyang Yang (Louisiana State University, USA); Maciej Brodowicz (Indiana University, USA); Walter Ligon (Clemson University, USA); Hartmut Kaiser (LSU, USA)

***Reliability Challenges for Storing Exabytes***

Ahmed Amer (Santa Clara University, USA); Darrell Long (University of California at Santa Cruz, USA); Thomas J.E. Schwarz (Universidad Catolica del Uruguay, Uruguay)

**CNC VI: Communications QoS**

Room: Suite Sea Pearl 3-4

Chair: Lei Chen (Sam Houston State University, USA)

***An Analytical QoS Model for IEEE 802.11-based Single and Multihop Wireless Networks***

Sajjad Pourmohammad (University of Louisiana at Lafayette, USA); Reza Soosahabi (Louisiana State University, USA); Dmitri Perkins (University of Louisiana at Lafayette, USA); Afef Fekih (University of Louisiana at Lafayette, USA)

***A Blocking Probability Estimator for the Multi-Application and Multi-Resource Constraint Problem***

Shuyi Yan (The University of Texas at Dallas, USA); Miguel Razo (University of Texas at Dallas & Computer Science, USA); Marco Tacca (The University of Texas at Dallas, USA); Andrea Fumagalli (UTD, USA)

***Congestion Control in Flow-Aware Resilient Multi-ring Networks***

Jerzy DomÅ¼aÅ, (AGH University of Science and Technology, Poland)

***Making Inter-domain Routing Power-Aware?***

Junxiao Shi (University of Arizona, USA); Beichuan Zhang (University of Arizona, USA)

***Emerging Cyberworld Attack Vectors: Modification, Customization, Secretive Communications, and Digital Forensics in PC Video Games***

Michael Ebrahimi (Sam Houston State University, USA); Lei Chen (Sam Houston State University, USA)

***Best Relay Selection for Underlay Cognitive Radio Systems with Collision Probability Minimization***

Yahya H. Ezzeldin (Alexandria University, Egypt); Ahmed Sultan (Alexandria University, Egypt); Moustafa Youssef (Egypt-Japan University of Science and Technology (EJUST), USA)

**16:00 - 18:00**

**Distinguished Lectures III: Network Science and Its Application in Wireless Networking**

Speaker: Dapeng Oliver Wu , Professor, University of Florida, USA

Room: South Pacific Ballroom 1

Chair: Guan-Ming Su (Dolby Lab, USA)

**EWNP II: Emerging Wireless Networks and Protocols II**

Room: South Pacific Ballroom 2

Chair: Tsang-Ling Sheu (National Sun Yat-Sen University, Kaohsiung, Taiwan)

***Multi-channel Cluster PAN for TVWS Band***

Kwang-il Hwang (Incheon National University, Korea); In Jang (Incheon National University, Korea)

***Pairwise Key Distribution Scheme for Two-Tier Sensor Networks***

Kanwalinderjit Kaur Gagneja (Southern Oregon University, USA)

***A Geocasting Application for Ambulance Service***

Pei-Hsuan Lee (National Sun Yat-sen University, Taiwan); Tsung-Chuan Huang (National Sun Yat-Sen University, Taiwan)

***Biometric Gait Recognition Based on Wireless Acceleration Sensor Using k-Nearest Neighbor Classification***



Sangil Choi (University of Nebraska at Omaha, USA); Ik-Hyun Youn (University of Nebraska at Omaha, USA); Richelle LeMay (University of Nebraska at Omaha, USA); Scott Burns (Lincoln Pius X High School, USA); Jong-Hoon Youn (University of Nebraska - Omaha, USA)

## **CNC VII: Wireless Communications**

Room: South Pacific Ballroom 3

Chair: Onur Kaya (ISIK University, Turkey)

### ***Reduced Complexity QoS aware Resource Allocation Technique for MISO-OFDMA Systems***

Mahmoud M Selim (Egypt-Japan University of Science and Technology & Tanta University, Egypt); Said M. Elnoubi (Alexandria University, Egypt); Hossam Shalaby (Alexandria University, Egypt); Osamu Muta (Kyushu University, Japan); Hiroshi Furukawa (Kyushu University, Japan)

### ***Optimal Primary-Secondary user Pairing and Power Allocation in Cognitive Cooperative Multiple Access Channels***

SaygÄ±n BakÄ±i (IÅÄ±k University, Turkey); Onur Kaya (ISIK University, Turkey)

### ***Antenna Array Design Using Generalized Fitness Functions***

Robert Kubichek (University of Wyoming, USA); Srinivasa Yasasvy Sateesh Bhamidipati (University of Wyoming, USA); Suresh Muknahallipatna (University of Wyoming, USA)

### ***Antenna Array Geometry for Mobile Ad-Hoc Networks***

Robert Kubichek (University of Wyoming, USA); Srinivasa Yasasvy Sateesh Bhamidipati (University of Wyoming, USA); Suresh Muknahallipatna (University of Wyoming, USA)

### ***A RESTfull Architecture for Enabling Rapid Development and Deployment of Companion Robot Applications***

Razieh Safaripour (Concordia University, Canada); Fatna Belqasmi (Concordia University, Canada); Ferhat Khendek (Concordia University, Canada); Roch Glitho (Concordia University, Canada)

### ***Hybrid Peer-to-Peer DNS***

Ricardo Sancho (Instituto Superior T cnico - Technical University of Lisbon, Portugal); Ricardo Lopes Pereira (INESC-ID/Instituto Superior T cnico, Portugal)

### **CNC VIII: Cloud and Multimedia Applications**

Room: South Pacific Ballroom 4

Chair: Ek Park (CSU-Chico, USA)

#### ***Big Data as an e-Health Service***

Wei Liu (Georgia Gwinnett College, USA); Ek Park (CSU-Chico, USA)

#### ***Hypervisor-based Cloud Intrusion Detection System***

Jason Nikolai (Dakota State University, USA); Yong Wang (Dakota State University, USA)

#### ***CCF: Fast and Scalable Connected Component Computation in MapReduce***

Hakan Kardes (inome Inc. & Intelius, USA); Siddharth Agrawal (inome Inc., USA); Xin Wang (inome Inc., USA); Ang Sun (inome Inc., USA)

#### ***Hierarchical Management Architecture and Testbed for Mobile Video Service Optimization***

Tiia Ojanper  (VTT Technical Research Centre of Finland, Finland); Markus Luoto (VTT Technical Research Centre of Finland, Finland); Mikko Uitto (VTT Technical Research Centre of Finland, Finland); Heli Kokkonen-Tarkkanen (VTT Technical Research Centre of Finland, European Union)

#### ***A Rate Adaptation Approach for Streaming Multiview Plus Depth Content***

Basak Oztas Yoldemir (The University of British Columbia, Canada); Mahsa T. Pourazad (TELUS Communications Company, Canada); Panos Nasiopoulos (University of British Columbia, Canada); Iraj Sodagar (Microsoft, USA); Victor CM Leung (The University of British Columbia, Canada)

#### ***Coherent PONs for Next Generation Access: OIDMA versus OCDMA***

Eslam El-Fiky (Alexandria University & Electrical Engineering Department, Faculty of Engineering, Egypt); Ziad A. El-Sahn (Alexandria University, Egypt); Hossam Shalaby (Alexandria University, Egypt)

### **CNC IX: Network Algorithms**

Room: Suite Sea Pearl 3-4

Chair: Jun Liu (University of North Dakota, USA)

***Greedy Failure-Carrying Packets***

Christoph Werle (Karlsruhe Institute of Technology (KIT), Germany); Oliver P. Waldhorst (Karlsruhe Institute of Technology (KIT), Germany)

***Persistent Dataset Generation using Real-Time Operative Framework***

Maher Salem (University of Applied Sciences Fulda & Network and Data Security, Germany)

***A Novel Method for Estimating the Variable and Constant Components of One-Way Delays Without Using the Synchronized Clocks***

Jun Liu (University of North Dakota, USA)

***A Utility Proportional Fairness Approach for Resource Allocation in 4G-LTE***

Ahmed Abdel-Hadi (Virginia Tech, USA); T. Charles Clancy (Virginia Tech, USA)

***Advance Bandwidth Reservation with Deadline Constraint in High-performance Networks***

Poonam Dharam (University of Memphis, USA); Chase Qishi Wu (University of Memphis & Oak Ridge National Laboratory, USA); Yongqiang Wang (Northwest University, P.R. China)

***Low Complexity All-Optical Network Coder Architecture***

Eric D. Manley (Drake University, USA)

## **Tuesday, February 4**

**08:30 - 09:30**

### **Keynote Talk: Software-Defined Access Networks: Unbundled Competitive Broadband**

Speaker: John M. Cioffi. Hitachi Professor Emeritus, Stanford University, USA

Rooms: South Pacific Ballroom 1, South Pacific Ballroom 2

Chair: Tomohiko Taniguchi (Fujitsu Laboratories Ltd., Japan)

**10:00 - 12:00**

### **Invited Position Talks I**

Room: South Pacific Ballroom 1

Chair: Guan-Ming Su (Dolby Lab, USA)

#### ***A New Approach to Coding in Content-Based MANETs***

Joshua Joy (UCLA, USA); Mario Gerla (University of California at Los Angeles, USA); Victor Perez (University of California, Los Angeles, USA); Yu-Ting Yu (University of California, Los Angeles, USA); Dennis Lu (UCLA, USA)

#### ***Spectrum-Energy Efficiency of Wireless Networks***

Fumiyuki Adachi (Tohoku University, Japan)

#### ***Millimeter Wave Cellular Channel Models for System Evaluation***

Tianyang Bai (The University of Texas at Austin, USA); Vipul Desai (Huawei Technologies, USA); Robert Heath (The University of Texas at Austin, USA)

### **NAPE: Network Algorithm & Performance Evaluation**

Room: South Pacific Ballroom 2

Chair: Lavy Libman (University of New South Wales, Australia)

#### ***Evaluation Framework for Reconstruction of Messages in Cooperative Coding Schemes of Multiple-Sources and Multiple-Relays***

Jin-Taek Seong (Gwangju Institute of Science and Technology, Korea); Heung-No Lee (Gwangju Institute of Science and Technology, Korea)

***Optimal Routing for Bidirectional Flows with Network Coding in Asymmetric Wireless Networks***

Hooman Reisi Dehkordi (University of Sydney, Australia); Lavy Libman (University of New South Wales, Australia)

***Achieving TCP Reno Friendliness in FAST TCP over Wide Area Networks***

Jingyuan Wang (Beihang University, P.R. China); Fei Gao (Beihang University, P.R. China); Jiangtao Wen (Tsinghua University, P.R. China); Li Chao (Beihang, P.R. China); Zhang Xiong (Beihang University, P.R. China); Yuxing Han (Flora Production Inc., P.R. China)

***A Comparative Study of Routing Metrics for Reliable Multi-Path Provisioning***

Ruben Rivera (Northern New Mexico College, USA); Jorge Crichigno (Northern New Mexico College, USA); Nasir Ghani (University of South Florida, USA)

***Performance analysis of multicast routing algorithms***

Dimitri Papadimitriou (Alcatel-Lucent Bell & UGent, Belgium); Davide Careglio (Universitat Politècnica de Catalunya, Spain); Piet Demeester (Ghent University - iMinds, Belgium)

***How to Transfer Flows Efficiently via the Internet?***

Sándor Molnár (Budapest University of Technology and Economics, Hungary); Zoltán Máczár (Budapest University of Technology and Economics, Hungary); Balázs Sonkoly (Budapest University of Technology and Economics, Hungary)

**CIS I: Communications and Information Security I**

Room: South Pacific Ballroom 3

Chair: Yibo Xue (Tsinghua university, P.R. China)

***SkyTracer: Towards Fine-Grained Identification for Skype Traffic via Sequence Signatures***

Zhenlong Yuan (Tsinghua University, P.R. China); Cuilan Du (National Computer Network Emergency Response Technical Team/Coordination Center, P.R. China); Xiaoxian Chen (Harbin University of Science and Technology, P.R. China); Dawei Wang

(National Computer Network Emergency Response Technical Team / Coordination Center of China, P.R. China); Yibo Xue (Tsinghua university, P.R. China)

***A Novel Method for Information Propagation Model Perceiving***

Chengqi Yi (Harbin University of Science and Technology, P.R. China); Yuanyuan Bao (Tsinghua University, P.R. China); Siqi Sun (Tsinghua University, P.R. China); Yibo Xue (Tsinghua university, P.R. China)

***Effective Immunization Strategy for Rumor Propagation Based on Maximum Spanning Tree***

Yuanyuan Bao (Tsinghua University, P.R. China); Yan Niu (CNCERT/CC, P.R. China); Chengqi Yi (Harbin University of Science and Technology, P.R. China); Yibo Xue (Tsinghua university, P.R. China)

***Combating False Data Injection Attacks in Smart Grid Using Kalman Filter***

Kebina Manandhar (Georgia State University, USA); Xiaojun Cao (Georgia State University, USA); Fei Hu (University of Alabama, USA); Yao Liu (University of South Florida, USA)

***Characterizing Application Behaviors for Classifying P2P Traffic***

Dawei Wang (National Computer Network Emergency Response Technical Team / Coordination Center of China, P.R. China); Luoshi Zhang (Harbin University of Science and Technology, P.R. China); Zhenlong Yuan (Tsinghua University, P.R. China); Yibo Xue (Tsinghua university, P.R. China); Yingfei Dong (University of Hawaii, USA)

***Dynamic Configuration of Batch Rekeying Interval for Secure Multicast Service***

DongHyun Je (Samsung Electronics, Korea); Han-Seok Kim (Samsung Electronics Co., LTD., Korea); Yoon-Ho Choi (Kyonggi University, Korea); Seung-Woo Seo (Seoul National University, Korea, Korea)

**WAHS I: Wireless Ad Hoc and Sensor Networks I**

Room: South Pacific Ballroom 4

Chair: Jianjun Yang (University of North Georgia, USA)

***Maximizing the Lifetime of Delay-Sensitive Sensor Networks via Joint Routing and Sleep Scheduling***

Yunan Gu (Texas Southern University, USA); Miao Pan (Texas Southern University, USA); Wei Li (Texas Southern University, USA)

***Wireless Sensor Network-based Air Quality Monitoring System***

Samer Essber Mansour (Alfaisal University & Dalhousie University, Saudi Arabia); Nidal Nasser (Alfaisal University, Saudi Arabia); Lutful Karim (Seneca College of Applied Arts and Technology, Canada); Asmaa Ali (University of Guelph, Canada)

***A Novel Communication Mode Selection Technique for DTN over MANET Architecture***

Masaya Ito (Tohoku University, Japan); Hiroki Nishiyama (Tohoku University, Japan); Nei Kato (Tohoku University, Japan)

***Fairness Based Dynamic Channel Allocation in Wireless Mesh Networks***

Jianjun Yang (University of North Georgia, USA); Yin Wang (Lawrence Technological University, USA); Kun Hua (Lawrence Technological University, USA); Wei Wang (South Dakota State University, USA)

***Ubiquitous Sensor Data Collection with Mobile Users***

Brendan Mumey (Montana State University, USA); Gang Xu (Uppsala University, Sweden); Edith C.-H. Ngai (Uppsala University & Division of Computer Systems, Sweden)

***Identifying Malicious Behavior in MANET through Data Path Information***

Danai Chasaki (Villanova University, USA)

**WC I: Wireless Communications I**

Room: Suite Sea Pearl 3-4

Chair: Marco Di Renzo (French National Center for Scientific Research (CNRS), France)

***A Globally Optimal Neyman-Pearson Test for Hard Decisions Fusion in Cooperative Spectrum Sensing***

Ahmed Alaa (Cairo University, Egypt); Omar Nasr (Cairo University, Egypt)

***Distributed Framework of Downlink CoMP MU-MIMO Transmission with Adaptive Mode Switch and Power Allocation***

Zhiyuan Zong (Fudan University, P.R. China); Hui Feng (Fudan University, P.R. China); Tao Yang (Fudan University, P.R. China); Bo Hu (Fudan University, Shanghai, P.R. China)

***A Novel Power Allocation Technique for 4G Cellular Networks***

Santosh V Nagaraj (San Diego State University, USA); Mahasweta Sarkar (San Diego State University, USA)

***Cross-Layer Radio Resource Allocation for Multi-Service Networks of Heterogeneous Traffic***

Arman Shojaeifard (University of Manchester, United Kingdom); Hadi Saki (King's College London & Centre for Telecommunications Research, United Kingdom); Mohammad Mirtavoosi Mahyari (King's College London, United Kingdom); Mohammad Shikh-Bahaei (Kings college London, United Kingdom)

***Performance of Amplify-and-Forward Relay Networks with Interference-Limited Destination in Rician Fading Environments***

Anas M. Salhab (King Fahd University of Petroleum & Minerals, Saudi Arabia); Fawaz Al-Qahtani (Texas A&M University at Qatar & Education City, Qatar); Salam A. Zummo (KFUPM, Saudi Arabia); Hussein Alnuweiri (Texas A&M University, Qatar)

***A systemic and cognitive approach for IoT security***

Arbia RIAHI (Military Academy of Tunisia, Tunisia); Enrico Natalizio (Universit  de Technologie de Compi gne, France); Yacine Challal (University of Technology of Compi gne & Heudiasyc lab. UMR CNRS, France); Nathalie Mitton (Inria Lille - Nord Europe, France); Antonio Iera (University Mediterranea of Reggio Calabria, Italy)

**13:30 - 14:30**

**Plenary Talk: Video Game as a Service   Cloud Computing Enabled Mobile Video Gaming**

Speaker: Victor C. M. Leung, Professor and TELUS Mobility Research Chair, UBC, Canada

Rooms: South Pacific Ballroom 1, South Pacific Ballroom 2

Chair: Tomohiko Taniguchi (Fujitsu Laboratories Ltd., Japan)

**14:30 - 15:30**

**Plenary Talk: Collaborative Innovation for ICT-Enabled Future Society Solutions**

Speaker: Yasunori Mochizuki, Vice President, NEC Corporation, Japan

Rooms: South Pacific Ballroom 1, South Pacific Ballroom 2



Chair: Tomohiko Taniguchi (Fujitsu Laboratories Ltd., Japan)

**16:00 - 17:20**

**Invited Position Talks II**

Room: South Pacific Ballroom 1

Chair: Rose Qingyang Hu (Utah State University, USA)

***Wide-Area Real-Time Surveillance Using Electric Vehicles and Helicopters for Disaster Recovery***

Kenichi Mase (Niigata University, Japan)

***Energy-Delay Tradeoff in Hyper-Cellular Networks with Base Station Sleeping Control***

Zhisheng Niu (Tsinghua University, P.R. China)

***Improving QoS in Real-Time Internet Applications: From Best-Effort to Software-Defined Networks***

Sergey Gorlatch (University of Munster, Germany); Tim Humernbrum (University of Münster, Germany); Frank Glinka (University of Muenster, Germany)

***Coding and Signal Processing for Ultra-High Density Magnetic Recording Channels***

Yong Liang Guan (Nanyang Technological University, Singapore); Guojun Han (Nanyang Technological University & Guangdong University of Technology, Singapore); Lingjun Kong (Nanyang Technological University, Singapore); Kheong Sann Chan (Data Storage Institute, Singapore); Kui Cai (Data Storage Institute, Singapore)

**16:00 - 18:00**

**COG: Cognitive Computing and Networking**

Room: South Pacific Ballroom 2

Chair: Shilpa Talwar (Intel, USA)

***Performance Analysis of a Cognitive-shared channel with GSC Diversity under Primary Outage Probability***

Ruifeng Duan (University of Vaasa, Finland); Mohammed Salem Elmusrati (University of Vaasa, Finland)

***Effect of Primary Power Fluctuation on Ergodic Capacity of a Secondary User in a Spectrum Sharing Environment***

Gosan Noh (Electronics and Telecommunications Research Institute, Korea); Sungmook Lim (Yonsei University, Korea); Yosub Park (Yonsei University, Korea); Jihaeng Heo (Yonsei University, Korea); Daesik Hong (Yonsei University, Korea)

***Markov Model Bank for Heterogenous Cognitive Radio Networks with Multiple Dissimilar Users and Channels***

Xiaohua (Edward) Li (State University of New York at Binghamton, USA); Chengyu Xiong (State University of New York at Binghamton, USA)

***Cross-Layer Resource Allocation for Video Streaming over OFDMA Cognitive Radio Networks with Imperfect Cross-Link CSI***

Hadi Saki (King's College London & Centre for Telecommunications Research, United Kingdom); Arman Shojaeifard (University of Manchester, United Kingdom); Mohammad Shikh-Bahaei (Kings college London, United Kingdom)

***Robust Scheduling and Congestion Control for Flexible Queueing Networks***

Ramtin Pedarsani (UC Berkeley, USA); Jean Walrand (University of California, Berkeley, USA); Yuan Zhong (UC Berkeley, USA)

***Stochastic Queue Modeling and Key Design Metrics Analysis for Solar Energy Powered Cellular Networks***

Heng Wang (Chongqing University, P.R. China); Hongjia Li (Institute of Acoustics, Chinese Academy of Sciences & Beijing University of Posts and Telecommunications, P.R. China); Zejue Wang (Institute of Acoustics, Chinese Academy of Sciences, P.R. China); Xin Chen (Chinese Academy of Sciences, P.R. China); Song Ci (University of Nebraska-Lincoln, USA)

**WN I: Wireless Networks I**

Room: South Pacific Ballroom 3

Chair: Youssef El Hajj Shehadeh (TU Chemnitz, Germany)

***Two-Way Cyclotomic Orthogonal Space-Time Transmission Scheme for Asynchronous Cooperative Systems***

Yudong Ma (Nanjing University, P.R. China); Hua Jiang (Nanjing University, P.R. China); Sidan Du (Nanjing University, P.R. China)

***Coexistence Management for Heterogeneous Networks in White Spaces***

Karim A. Khalil (The Ohio State University, USA); Golnaz Farhadi (Fujitsu Laboratories of America, USA); Akira Ito (Fujitsu Laboratories of America, USA)

***On Relay Assignment Strategy in Wireless Cellular Environment***

Chun-Lin Wu (National Taiwan University, Taiwan); Tsungnan Lin (National Taiwan University, Taiwan); Hsiun-Fu Liu (National Taiwan University, Taiwan); Zan-Yu Chen (National Taiwan University, Taiwan)

***SODCA: A Self-Organized Distributed Channel Access Scheme for IEEE 802.11 Networks***

Youssef El Hajj Shehadeh (TU Chemnitz, Germany); Mohamad Hotait (University of Goettingen, Germany); Dieter Hogrefe (University of Goettingen, Germany)

***Wide-area Centralized Radio Resource Management for DCF-based Multi-hop Ad hoc Wireless Networks***

Shinichi Miyamoto (Osaka University, Japan); Naoki Hayata (Osaka University, Japan); Seiichi Sampei (Osaka University, Japan); Wenjie Jiang (NTT Network Innovation Laboratories, NTT Corporation & Research Engineer, Japan)

***Concurrency in Polygonally Arranged Wireless Data Centers with All Line-of-Sight Links***

Hars Vardhan (University of Texas at Dallas, USA); Ravi Prakash (University of Texas at Dallas, USA)

**CQSM: Communication QoS and System Modeling**

Room: South Pacific Ballroom 4

Chair: Peerapol Tinnakornsrisuphap (Qualcomm Technologies, USA)

***Optimal threshold configuration with equality based call admission control with cooperative users (mixed loss and delay system)***

Sumiko Miyata (Kanagawa University, Japan); Katsunori Yamaoka (Tokyo Institute of Technology, Japan); Hirotsugu Kinoshita (Kanagawa University, Japan)

***Time-based Criteria for Performance Comparison of Resource-Intensive User Tasks in Virtual Desktops***

Mikhail Makarov (Volga oil-trunk pipelines JSC, Russia); Prasad Calyam (University of Missouri-Columbia, USA); Andrei Sukhov (Samara State Aerospace University & Internet TV ltd., Russia); Vitaly Samykin (Samara State Aerospace University, USA)

***Coverage and Capacity Analysis of Hybrid Home Networks***

Peerapol Tinnakornsriruphap (Qualcomm Technologies, USA); Punyaslok Purkayastha (Qualcomm Technologies, USA); Bibhu Mohanty (Qualcomm Technologies, USA)

***Fair Queueing without Per-Flow Queues: A Virtual Queueing Machine***

Gary Chang (Qualcomm Tech Inc, USA); Chung-Chieh Lee (Northwestern University, USA)

***Analysis of Realized Peer-to-Peer Streaming Topologies by Kronecker Graphs***

Udo R. Krieger (Otto-Friedrich University Bamberg, Germany); Philipp Eittenberger (Otto-Friedrich University Bamberg, Germany); Alex Borges Vieira (Universidade Federal de Juiz de Fora, Brazil)

***Towards Real-time Processing for Application Identification of Encrypted Traffic***

Yuichi Kumano (Osaka City University, Japan); Shingo Ata (Osaka City University, Japan); Nobuyuki Nakamura (OKI Electric Industry Co., Ltd., Japan); Yoshihiro Nakahira (Oki Electric Industry, Japan); Ikuo Oka (Osaka City University, Japan)

**ISA: Internet Services and Applications**

Room: Suite Sea Pearl 3-4

Chair: Tilman Wolf (University of Massachusetts, USA)

***A Socio- And Locality-Aware Overlay for User-Centric Networking***

Martin Florian (Karlsruhe Institute of Technology, Germany); Fabian Hartmann (Karlsruhe Institute of Technology (KIT), Germany); Ingmar Baumgart (Karlsruhe Institute of Technology (KIT), Germany)

***Some Observations on the Performance of CCN-Flooding***

Ahmed W Kazi (Stony Brook University, USA); Hussein Badr (Stony Brook University, USA)

***Mapping of Delay-Sensitive Virtual Networks***

Karthikeswar Ivaturi (University of Massachusetts, USA); Tilman Wolf (University of Massachusetts, USA)

***Uplink Allocation based on User Actions for Peer-To-Peer Video-on-Demand***

Filippos Koravos (Center for Research and Technology - Hellas (CERTH), Greece);  
Leandros Tassiulas (University of Thessaly, Greece)

***Introducing ufo.js: a browser-oriented p2p network***

Antonio Bevilacqua (Università degli studi di Napoli Federico II, Italy); Pasquale Boemio (Università degli studi di Napoli Federico II, Italy); Simon Pietro Romano (University of Napoli Federico II, Italy)

***Quality Evaluation of Voice over Multiple TCP Connections***

Kozo Satoda (NEC Corporation, Japan); Koichi Nihei (NEC Corporation, Japan); Hiroshi Yoshida (NEC Corporation, Japan)

## Wednesday, February 5

08:30 - 09:30

### **Keynote Talk: The Software-Defined Building: A Machine for Living**

Speaker: Randy Katz. United Microelectronics Corporation Distinguished Professor, University of California, Berkeley, USA

Rooms: South Pacific Ballroom 1, South Pacific Ballroom 2

Chair: Zhensheng Zhang (UCLA, USA)

10:00 - 12:00

### **Invited Position Talks III**

Room: South Pacific Ballroom 1

Chair: Guan-Ming Su (Dolby Lab, USA)

#### ***Coding Theory for Reliable Signal Processing***

Aditya Vempaty (Syracuse University, USA); Yunghsiang Sam Han (National Taiwan University of Science and Technology, Taiwan); Lav R. Varshney (University of Illinois at Urbana-Champaign, USA); Pramod Varshney (Syracuse University, USA)

#### ***Joint Network Channel Fountain Scheme for Reliable Communication in Wireless Networks***

Ahasanun Nessa (École de technologies supérieures, Canada); Kadoch Michel (École de technologie supérieure, Canada); Bo Rong (CRC, Canada)

#### ***Designing provably efficient Map-Reduce Schedulers: A probabilistic approach***

Ness B. Shroff (The Ohio State University, USA)

### **IP I: Invited Papers I**

Room: South Pacific Ballroom 2

Chair: Meng-Shiuan Pan (Tamkang University, Taiwan)

#### ***Type-aware Task Placement in Geo-distributed Data Centers with Low OPEX using Data Center Resizing***

Lin Gu (The University of Aizu, Japan); Deze Zeng (School of Computer Science and Engineering, The University of Aizu, Japan); Song Guo (The University of Aizu, Japan); Shui Yu (Deakin University, Australia)

***Security from the Transparent Computing Aspect***

Guojun Wang (Central South University, P.R. China); Qin Liu (Central South University & Temple University, P.R. China); Yang Xiang (Deakin University, Australia); Jianer Chen (Texas A&M University, USA)

***Survivable Virtual Optical Network Mapping in Flexible-Grid Optical Networks***

Weisheng Xie (University of Texas at Dallas, USA); Jason P. Jue (University of Texas at Dallas, USA); Qiong Zhang (Fujitsu Laboratories of America, USA); Xi Wang (Fujitsu Laboratories of America, USA); Qingya She (Fujitsu Network Communications, USA); Papparao Palacharla (FLA, USA); Motoyoshi Sekiya (Fujitsu Laboratories of America, Inc., USA)

***Dynamic Spectrum Access: Current State of the Art and Future Challenges***

Anirudha Sahoo (NIST, USA); Michael R. Souryal (National Institute of Standards and Technology, USA)

**CIS II: Communications and Information Security II**

Room: South Pacific Ballroom 3

Chair: Xiaojun Cao (Georgia State University, USA)

***Emilie: Enhance the Power of Traffic Identification***

Yiyang Shao (Tsinghua University, P.R. China); Baohua Yang (IBM Research, P.R. China); Jingjie Jiang (Hong Kong University of Science and Technology, Hong Kong); Yibo Xue (Tsinghua university, P.R. China); Jun Li (Tsinghua University, P.R. China)

***Optimal Hidden SCADA Attacks on Power Grid: A Graph Theoretic Approach***

Deepjyoti Deka (University of Texas, USA); Ross Baldick (The University of Texas at Austin, USA); Sriram Vishwanath (University of Texas Austin, USA)

***P2DR: Privacy-Preserving Demand Response System in Smart Grids***

Depeng Li (University of Hawaii at Manoa, USA); Zeyar Aung (Masdar Institute of Science and Technology, UAE); John Williams (MIT, USA); Abel Sanchez (Massachusetts Institute of Technology, USA)

***Techniques for Detecting Attacks on Critical Infrastructure***

Udaya Tupakula (Macquarie University, Australia); Vijay Varadharajan (Macquarie university, Australia)

***Stack Protection in Packet Processing Systems***

Peng Wu (University of Massachusetts, USA); Tilman Wolf (University of Massachusetts, USA)

***Risk-Driven Aggregation and Transmission Prioritization of Cyber Alerts over Mobile Networks***

Hasan Cam (Army Research Laboratory, USA); Pierre Moullem (US Army Research Laboratory, USA)

**WAHS II: Wireless Ad Hoc and Sensor Networks II**

Room: South Pacific Ballroom 4

Chair: Cheng Li (Memorial University of Newfoundland, Canada)

***Message Prioritization of Epidemic Forwarding in Delay-Tolerant Networks***

Xu Liu (Memorial University of Newfoundland, Canada); Yuanzhu Chen (Memorial University of Newfoundland, Canada); Cheng Li (Memorial University of Newfoundland, Canada); Walter Taylor (Dartmouth College, USA); Jason Moore (Dartmouth College, USA)

***ICAN: Information-Centric Context-Aware Ad-Hoc Network***

Yu-Ting Yu (University of California, Los Angeles, USA); Chris Tandiono (UCLA, USA); Xiao Li (UCLA, USA); You Lu (University of California, Los Angeles, USA); M. Y. Sanadidi (University of California, Los Angeles, USA); Mario Gerla (University of California at Los Angeles, USA)

***Performance of p-persistent Slotted Aloha for Underwater Sensor Networks***

Yanping Zhang (Gonzaga University, USA)

***Channel Assignment in Cognitive Wireless Sensor Networks***

Mihaela Cardei (Florida Atlantic University, USA); Amalya Mihnea (Florida Atlantic University, USA)



***Ensemble Empirical Mode Decomposition for Time Series Prediction in Wireless Sensor Networks***

Gagan Goel (University of Toronto, Canada); Dimitrios Hatzinakos (University of Toronto, Canada)

***Online Data-Centric Anomaly Detection Framework For Sensor Network Deployments***

Giovani Rimon Abuaitah (Wright State University, USA); Bin Wang (Wright State University, USA)

**WC II: Wireless Communications II**

Room: Suite Sea Pearl 3-4

Chair: Rose Qingyang Hu (Utah State University, USA)

***Link Adaptation in Closed-Loop Coded MIMO Systems with LMMSE-IC based Turbo Receivers***

Baozhu Ning (SUPELCE, France); Raphael Visoz (Orange Labs, France); Antoine O. Berthet (Supélec, France)

***On the Marginal Area under the Receiver Operating Characteristics of Diversity Energy Detectors in Generalized Fading Channels***

Eyidayo Adebola (Prairie View A & M University & CECSTR, USA); Abiodun Olaluwe (Prairie View A&M University, USA); Annamalai Annamalai (Prairie View A&M University, USA)

***Achievable Rate of a Two-Way Relay Channel with Structured Code under Rayleigh Fading***

Youvaraj Sagar (Wichita State University, USA); Jie Yang (Wichita State University, USA); Hyuck Kwon (Wichita State University, USA); Wooseok Nam (Samsung Information Systems America, USA)

***Stochastic Geometry Analysis of the Average Error Probability of Downlink Cellular Networks***

Peng Guan (CNRS, France); Marco Di Renzo (French National Center for Scientific Research (CNRS), France)

***Network Coding in Multiple Access Relay Channel with Multiple Antenna Relay***

Lili Wei (Utah State University, USA); Wen Chen (Shanghai Jiao Tong University, P.R. China); Rose Qingyang Hu (Utah State University, USA); Geng Wu (Intel Corporation, USA)

***Performance Analysis of Spatial Modulation MIMO in a Poisson Field of Interferers***

Wei Lu (L2S, CNRS, Université Paris-Sud, France); Marco Di Renzo (French National Center for Scientific Research (CNRS), France)

**13:30 - 14:30**

**Plenary Talk: Micro Base Station Aided Vehicular Ad Hoc Networking**

Speaker: Izhak Rubin. Distinguished Professor, UCLA, USA

Rooms: South Pacific Ballroom 1, South Pacific Ballroom 2

Chair: Zhensheng Zhang (UCLA, USA)

**14:30 - 15:30**

**Plenary Talk: Disaster Resilient Network Technologies: MDRU and Relay-by-Smartphone**

Speaker: Nei Kato. Professor, Tohoku University, Japan

Rooms: South Pacific Ballroom 1, South Pacific Ballroom 2

Chair: Khaled El-Maleh (Qualcomm Inc., USA)

**16:00 - 18:00**

**Invited Position Talks IV**

Room: South Pacific Ballroom 1

Chair: Rose Qingyang Hu (Utah State University, USA)

***Spectrum Sharing: Challenges, Directions, and Opportunities***

Min Song (The University of Toledo, USA)

***Algorithmic Challenges in Flexible Optical Networks***

Emmanuel Varvarigos (University of Patras & Computer Technology Institute, Greece); Kostas Christodoulopoulos (University of Patras, Greece)

***Recent Advances and Challenges in Human-centric Multimedia Mobile Cloud Computing***

Eduardo Cerqueira (Federal University of Para & UFPA, Brazil); Euisin Lee (University of California, Los Angeles, USA); Jui-Ting Weng (University of California, Los Angeles, USA); Jae-Han Lim (University of California, Los Angeles, USA); Joshua Joy (UCLA, USA); Mario Gerla (University of California at Los Angeles, USA)

**IP II: Invited Papers II**

Room: South Pacific Ballroom 2

Chair: Golnaz Farhadi (Fujitsu Laboratories of America, USA)

***SocialCloaking: a Distributed Architecture for K-anonymity Location Privacy Protection***

Ren-Hung Hwang (National Chung-Cheng University, Taiwan); Fu-Hui Huang (National Chung-Cheng University, Taiwan)

***Multi-Radio Heterogeneous Networks: Architectures and Performance***

Nageen Himayat (Intel Corporation, USA); Shu-ping Yeh (Intel Corporation, USA); Ali Y Panah (Intel Corporation, USA); Shilpa Talwar (Intel, USA); Mikhail Gerasimenko (Tampere University of Technology, Finland); Sergey Andreev (Tampere University of Technology, Finland); Yevgeni Koucheryavy (Tampere University of Technology, Finland)

***Reduction of data prevention cost and improvement of reliability in MLC NAND flash storage system***

Danghui Wang (Northwestern Polytechnical University, P.R. China); Jie Guo (University of Pittsburgh, USA); Kai Bu (National University of Defense Technology, P.R. China); Yiran Chen (University of Pittsburgh, USA)

***Connectivity As a Service: Towards Optical-based Network Virtualization***

Yang Wang (La Salle University, USA); Qian Hu (Georgia State University, USA); Xiaojun Cao (Georgia State University, USA)

**WN II: Wireless Networks II**

Room: South Pacific Ballroom 3

Chair: Wahab Almuhtadi (Algonquin College & Faculty of Technology & Trades, Canada)

***Full Duplex Device to Device Communication in Cellular Networks***

Sanghoon Kim (University of Michigan, USA); Wayne Stark (University of Michigan, USA)

***Acceleration and Visualization of Dynamic Network Optimization***

Yuanzhou Ye (University of Reading/ Symantec Corporation, United Kingdom); JosÃ© O. Cadenas (University of Reading, United Kingdom); Graham Megson (University of Westminster, London, United Kingdom)

***Reducing Power Consumption in LTE Data Scheduling with the Constraints of Channel Condition and QoS***

Li-Ping Tung (National Chiao Tung University, Taiwan); Ying-Dar Lin (National Chiao Tung University, Taiwan); Yu-Hsien Kuo (National Chiao Tung University, Taiwan); Yuan-Cheng Lai (Information Management, NTUST, Taiwan); Krishna M. Sivalingam (Indian Institute of Technology Madras, India)

***Aggregating Internet Access in a Mesh-Backhauled Network through MPTCP Proxying***

Wahab Almuhtadi (Algonquin College & Faculty of Technology & Trades, Canada); Thanh-Hieu Nong (Algonquin College, Canada); Ricky Wong (Algonquin College, Canada); Jordan Melzer (TELUS Communications, Canada)

***Cost Analysis of Movement-Based Location Update Scheme Using an Approach of Embedded Markov Chain***

Xian Wang (Southwest Jiaotong University & National Taiwan University of Science and Technology, P.R. China); Xianfu Lei (Utah State University, USA); Rose Qingyang Hu (Utah State University, USA); Geng Wu (Intel Corporation, USA)

***Downlink Resource Allocation with Cooperative Transmission in EPON-WiMAX Integrated Network***

Shang-Hsiu Tien (National Chung-Cheng University, Taiwan); Hung-Yi Teng (National Chung-Cheng University, Taiwan); Ren-Hung Hwang (National Chung-Cheng University, Taiwan)

**SPC: Signal Processing for Communications**

Room: South Pacific Ballroom 4

Chair: Joseph B. Soriaga (Qualcomm, Inc., USA)

***Improving Smartphone Downlink Performance and Energy Efficiency with 3-Antenna Receive Diversity***

Joseph B. Soriaga (Qualcomm, Inc., USA); Xiaoyin He (Qualcomm Technologies, Inc., USA); Yu-Chin Ou (Qualcomm Technologies, Inc., USA); Christopher Lott (Qualcomm, Inc., USA); Rashid Attar (QUALCOMM Inc., USA)

***Achievable Angles Between Two Compressed Sparse Vectors Under RIP-Induced Norm/Distance Constraints***

Ling-Hua Chang (National Chiao Tung University, Taiwan); Jwo-Yuh Wu (National Chiao Tung University, Taiwan)

***Variance Detection for Non-coherent Impulse Radio UWB Receivers***

Aidong Yang (Dalhousie University, Canada); Hong Nie (University of Northern Iowa, USA); Zhimeng Xu (Fuzhou University, P.R. China); Zhizhang (David) Chen (Dalhousie University, Canada)

***Beampattern Analysis for MIMO Radar and Telecommunication System Coexistence***

Awais Khawar (Virginia Tech, USA); Ahmed Abdel-Hadi (Virginia Tech, USA); T. Charles Clancy (Virginia Tech, USA); Robert McGwier (Virginia Tech & Allied Communications, AMSAT, and Flex Radio System, Inc., USA)

***Exact BER Analysis of Subcarrier QAM and PSK Intensity Modulations in Strong Turbulence***

Md. Zoheb Hassan (School of Engineering, University of British Columbia, Canada); Md. Jahangir Hossain (University of British Columbia, Okanagan, Canada); Julian Cheng (University of British Columbia, Canada)

**OGN: Optical and Grid Networking**

Room: Suite Sea Pearl 3-4

Chair: Zuqing Zhu (University of Science and Technology of China, P.R. China)

***Scheduling Aware Dimensioning for Time-Domain Wavelength Interleaved Network***

Bogdan Uscumlic (Telecom Bretagne, France); Yvan Pointurier (Alcatel-Lucent Bell Labs, France); Annie Gravey (Institut Mines Telecom - Telecom Bretagne, France); Philippe Gravey (Télécom Bretagne, France); Luay Alahdab (Institut Mines Telecom - Telecom Bretagne, France)

***Dynamic Anycast in Inter-Datacenter Networks over Elastic Optical Infrastructure***

Liang Zhang (University of Science and Technology of China, P.R. China); Zuqing Zhu (University of Science and Technology of China, P.R. China)

***Reliable Light-tree Construction with Weighted SRLGs in Optical Networks***

Yi Zhu (Hawaii Pacific University, USA); Kevin Goo (Hawaii Pacific University, USA)

***Spectrum Defragmentation Implementation based on Software Defined Networking (SDN) in Flexi-Grid Optical Networks***

Xiaosong Yu (Beijing University of Posts and Telecommunications, P.R. China); Yongli Zhao (Beijing University of Posts and Telecommunications, P.R. China); Jie Zhang (Beijing University of Posts and Telecommunications, P.R. China); Lingnan Gao (Beijing University of Posts and Telecommunications, P.R. China); Jiawei Zhang (Beijing University of Posts and Telecommunications, P.R. China); Xinbo Wang (University of California, Davis, P.R. China)

***Lowering Power Consumption in Dedicated Tributary Protection Schemes Using Digital Subcarrier Optical Networks***

Miguel Razo (University of Texas at Dallas & Computer Science, USA); Marco Tacca (The University of Texas at Dallas, USA); Andrea Fumagalli (UTD, USA); Rongqing Hui (University of Kansas, USA)

***Blocking Resolution for Short Flows in Optical Flow Switching Networks***

Zhengfeng Qian (Hangzhou Dianzi University, P.R. China); Kwok Wai Cheung (The Chinese University of Hong Kong, Hong Kong)

## **Thursday, February 6**

**08:30 - 09:30**

### **Keynote Talk: Emerging Opportunities and Challenges with Smartphones: Crowdsourcing and User Authentication**

Speaker: Guoliang Xue. Professor, Arizona State University, USA

Rooms: South Pacific Ballroom 1, South Pacific Ballroom 2

Chair: Khaled El-Maleh (Qualcomm Inc., USA)

**10:00 - 12:00**

### **Distinguished Lectures IV: Attentive Visual Processing - Towards User-Centric Visual Technologies**

Speaker: Lina J. Karam , Professor, Arizona State University, USA

Room: South Pacific Ballroom 1

Chair: Joseph B. Soriaga (Qualcomm, Inc., USA)

### **IP III: Invited Papers III**

Room: South Pacific Ballroom 2

Chair: Prasad Calyam (University of Missouri-Columbia, USA)

#### ***Wide-area Overlay Networking to Manage Science DMZ Accelerated Flows***

Prasad Calyam (University of Missouri-Columbia, USA); Alex Berryman (Ohio Supercomputer Center/OARnet, The Ohio State University, USA); Erik Saule (University of North Carolina at Charlotte, USA); Hari Subramoni (The Ohio State University, USA); Gordon K Springer (University of Missouri-Columbia, USA); Paul Schopis (OARnet, USA); Umit V. Catalyurek (The Ohio State University, USA); Dhableswar Panda (The Ohio State University, USA)

#### ***Cross-Layer Optimization for Satellite-Terrestrial Heterogeneous Networks***

Jihwan P. Choi (Daegu Gyeongbuk Institute of Science and Technology, Korea); Changhee Joo (UNIST, Korea)

#### ***Optimal Joint Viterbi Detector Decoder (JVDD) over AWGN/ISI Channel***

Kheong Sann Chan (Data Storage Institute, Singapore); Sari Shafidah (Data Storage Institute, Singapore); Moulay Rachid Elidrissi (National University of Singapore, Singapore); Yong Liang Guan (Nanyang Technological University, Singapore)

***Battery Free Wireless Sensor Networks: Theory and Applications***

Ali Abedi (University of Maine, USA)

**MCC: Multimedia Computing and Communications**

Room: South Pacific Ballroom 3

Chair: Panos Nasiopoulos (University of British Columbia, Canada)

***Joint Multi-Video Compression for Robot Explorations***

Yu Sun (University of Central Arkansas, USA); Michael Turney (University of Central Arkansas, USA)

***Human Action Recognition using Meta Learning for RGB and Depth Information***

Mohsen Amiri (University of British Columbia & Sharif University of Technology, and Simon Fraser University, Canada); Mahsa T. Pourazad (TELUS Communications Company, Canada); Panos Nasiopoulos (University of British Columbia, Canada); Victor CM Leung (The University of British Columbia, Canada)

***Enhancing Cloud Mobile 3D Display Gaming User Experience by Asymmetric Graphics Rendering***

Yao Lu (University of California, San Diego, USA); Yao Liu (UC San Diego, USA); Sujit Dey (University of California, San Diego, USA)

***A New Rate-Complexity-QP Algorithm (RCQA) for HEVC Intra-Picture Rate Control***

Ling Tian (University of Electronic Science and Technology of China, P.R. China); Yimin Zhou (University of Electronic Science and Technology of China, P.R. China); Xiaojun Cao (Georgia State University, USA)

***Secure Trust Management for Mobile Platforms***

Raimund Ege (Northern Illinois University, USA)

***Minimum Distortion Variance Concatenated Block Codes for Embedded Source Transmission***

Suayb S. Arslan (Quantum Corporation, USA)



## **GCNC & WC: Green Computing, Networking, Communications & Wireless Communications**

Room: South Pacific Ballroom 4

Chair: Annamalai Annamalai (Prairie View A&M University, USA)

### ***Performance Analysis of coherently detected FFH/BPSK with Maximal Ratio Combining Receiver Over Rayleigh Fading Channel with Multitone Jamming and Imperfect Channel Estimation***

Yishan He (University of Electronic Science and Technology of China, P.R. China);  
Yufan Cheng (University of Electronic Science and Technology of China, P.R. China);  
Gang Wu (University of Electronic Science and Technology of China, P.R. China);  
Shaoqian Li (University of Electronic Science and Technology of China, P.R. China)

### ***Spectrum Sharing between Public Safety and Commercial Users in 4G-LTE***

Haya Shajaiah (Virginia Tech, USA); Ahmed Abdel-Hadi (Virginia Tech, USA); T.  
Charles Clancy (Virginia Tech, USA)

### ***Chaos-Based Modulation for Blind and Coherent Signal Detection in Non-Cooperative TDD Cellular Networks with Large Antenna Arrays***

Jose Lagunas-Morales (University of Sherbrooke, Canada)

### ***Adaptive Energy-aware Free Viewpoint Video Transmission over Wireless Networks***

Zhi Liu (National Institute of Informatics, The Graduate University for Advanced Studies, Japan); Jingyun Feng (National Institute of Informatics, The Graduate University for Advanced Studies, Japan); Yusheng Ji (National Institute of Informatics, Japan);  
Yongbing Zhang (University of Tsukuba, Japan)

### ***Renewable Energy-Aware Grooming in IP-over-WDM Networks***

Thilo SchÄ¶ndienst (University of Massachusetts Lowell, USA); Vinod M. Vokkarane (University of Massachusetts Lowell & Massachusetts Institute of Technology (MIT), USA)

### ***Network Aware Job Scheduling in Green Data Centers***

Derya Åđavdar (Bogazici University & IBM Research Zurich Lab, Turkey); Fatih Alagoz (Bogazici University, Turkey)

**13:30 - 15:30**

## **Distinguished Lectures V: Everlasting Security and Undetectability in Wireless Communications**

Speaker: Dennis Goeckel, Professor, University of Massachusetts at Amherst, USA

Room: South Pacific Ballroom 1

Chair: Ali Abedi (University of Maine, USA)

## **IP IV: Invited Papers IV**

Room: South Pacific Ballroom 2

Chair: Wu Jianming (Fujitsu R&D Center, Canada)

### ***The Cost of Loop Free Alternates in IP Over WDM***

Ä†iril RoÄ¾iÄ¼ (University of Hawaii, USA); Galen Sasaki (University of Hawaii, USA)

### ***Adding Dimensions to Wireless Systems with Orientation-Aware Devices and Reconfigurable Antennas***

Daniel Tunon (Texas A&M University, USA); Jean-Francois Chamberland (Texas A&M University, USA); Gregory Huff (Texas A&M University, USA)

### ***Adaptive coverage for high data rate LTE Networks***

Rami Sabouni (Carleton University, Canada); Roshdy H Hafez (Carleton University, Canada); Marc St-Hilaire (Carleton University, Canada)

### ***Evolution to Future DWDM Centric Multi Service Converged Metro Network***

Lynn Lu (Ericsson, P.R. China); Zere Ghebretensae (Ericsson, Sweden); BjÄ¶rn Skubic (Ericsson AB, Sweden); Fabio Cavaliere (Ericsson Telecomunicazioni, Italy); Xiaoxia Zhou (China Unicom, P.R. China); Guangquan Wang (China Unicom, P.R. China)

## **MCVC: Mobile Computing and Vehicle Communications**

Room: South Pacific Ballroom 3

Chair: Wei Yan (Peking University, P.R. China)

### ***DA2RF: A Data Aggregation Algorithm by Restricting Forwarders for VANETs***

Yuan Yuan (Peking University, P.R. China); Jie Luo (School of EECS, Peking University, P.R. China); Wei Yan (Peking University, P.R. China); Tong Zhao (Peking University, P.R. China); Shanbo Lu (Peking University, P.R. China)

***Sober-Drive: A Smartphone-assisted Drowsy Driving Detection System***

Lunbo Xu (Peking University, P.R. China); Shunyang Li (Peking University, P.R. China); Kaigui Bian (Peking University, P.R. China); Tong Zhao (Peking University, P.R. China); Wei Yan (Peking University, P.R. China)

***Performance Analysis of EDCA with Strict Priorities Broadcast in IEEE802.11p VANETs***

Ping Wang (Tongji University, P.R. China); Fei Wang (Tongji University, P.R. China); Yusheng Ji (National Institute of Informatics, Japan); Fuqiang Liu (Tongji University, P.R. China); Xinhong Wang (Tongji University, P.R. China)

***SideEye: Mobile Assistant for Blind Spot Monitoring***

Sanjeev Singh (University of South Carolina, USA); Rufeng Meng (University of South Carolina, USA); Srihari Nelakuditi (University of South Carolina, USA); Yan Tong (University of South Carolina, USA); Song Wang (University of South Carolina, USA)

***FQGWs: A Gateway Selection Algorithm in a Hybrid Clustered-VANET LTE-Advanced Network: Complexity and Performances***

Ghayet el mouna Zhioua (Telecom ParisTech - FRANCE, France); Houda Labiod (TELECOM ParisTech (ex: ENST), France); Nabil Tabbane (Sup'com, Tunisia); Sami Tabbane (Sup Telecom, Tunisia)

***Performance Analysis of an Adaptive Rate-Range Control Algorithm for VANET Safety Applications***

Muhammad Awais Javed (University of Newcastle, Australia); Jamil Y Khan (The University of Newcastle, Australia)

***CLD: Cloud Computing Big Data & Data Storage Technology and Applications***

Room: South Pacific Ballroom 4

Chair: Brendan Mumeey (Montana State University, USA)

***Design of Reliable Virtual Infrastructure Using Local Protection***

Hao Di (University of Electronic Science and Technology of China, P.R. China); Vishal Anand (The College at Brockport, State University of New York, USA); Hongfang Yu

(University of Electronic Science and Technology of China, P.R. China); Le Min Li (University of Electronic Science and Technology of China, P.R. China); Dan Liao (University of Electronic Science and Technology of China, P.R. China); Gang Sun (University of Electronic Science and Technology of China, P.R. China)

***An Overlay Network Construction Technique for Minimizing the Impact of Physical Network Disruption in Cloud Storage Systems***

Katsuya Suto (Tohoku University, Japan); Hiroki Nishiyama (Tohoku University, Japan); Nei Kato (Tohoku University, Japan); Takayuki Nakachi (NTT, Japan); Tatsuya Fujii (NTT Network Innovation Laboratories, Japan); Atsushi Takahara (NTT, Japan)

***Shadow Computing: An Energy-Aware Fault Tolerant Computing Model***

Bryan Mills (University of Pittsburgh, USA); Taieb Znati (University of Pittsburgh, USA); Rami Melhem (University of Pittsburgh, USA)

***On the Impact of Coding Parameters on Storage Requirement of Region-based Fault Tolerant Distributed File System Design***

Sujogya Banerjee (Arizona State University, USA); Arun Das (Arizona State University, USA); Anisha Mazumder (Arizona State University, USA); Zahra Derakhshandeh (Arizona State University, USA); Arunabha Sen (ASU, USA)

***Multilevel Interleaved Reed-Solomon Codes Using Soft Information for Magnetic Recording Channels***

Ismail Demirkan (Broadcom Corporation, USA); Gregory Silvus (Broadcom Corporation, USA)

***Soft Intertrack Interference Cancellation for Two-Dimensional Magnetic Recording***

Elnaz Banan Sadeghian (Georgia Institute of Technology, USA); John Barry (Georgia Institute of Technology, USA)

**16:00 - 18:00**

**Distinguished Lectures VI: The Great Indoors: The Next Frontier in Mobile Positioning**

Speaker: Ayman Naguib, Director, Qualcomm, USA

Room: South Pacific Ballroom 1

Chair: Ek Park (CSU-Chico, USA)

## **IP V: Invited Papers V**

Room: South Pacific Ballroom 2

Chair: Kanwalinderjit Kaur Gagneja (Southern Oregon University, USA)

### ***Vertical Constrained Coding for Phase-Change Memory with Thermal Crosstalk***

Kui Cai (Data Storage Institute, Singapore)

### ***Highly accurate video object identification utilizing hint information***

Liang Peng (Utah State University, USA); Yimin Yang (Florida International University, USA); Xiaojun Qi (Utah State University, USA); Haohong Wang (TCL Research America, USA)

### ***Software-Defined Cyber-Physical Multinetworks***

Zhijing Qin (University of California, Irvine, USA); Ngoc Do (UC Irvine, USA); Grit Denker (SRI International, USA); Nalini Venkatasubramanian (University of California, Irvine, USA)

## **WN III: Wireless Networks III**

Room: South Pacific Ballroom 3

Chair: Ali Abedi (University of Maine, USA)

### ***FastBeam: Practical Fast Beamforming for Indoor Environments***

Chao-Fang Shih (Georgia Institute of Technology, USA); Raghupathy Sivakumar (Georgia Institute of Technology, USA)

### ***Practical Provably Secure Multi-node Communication***

Omar Hasan (Alexandria University, Egypt); Mahmoud F. Ayoub (Alexandria University, Egypt); Moustafa Youssef (Egypt-Japan University of Science and Technology (EJUST), USA)

### ***An Effective Taxi Recommender System Based on a Spatiotemporal Factor Analysis Model***

Yuling Hsueh (National Chung Cheng University, Taiwan); Ren-Hung Hwang (National Chung-Cheng University, Taiwan); Yu-Ting Chen (National Chung Cheng University, Taiwan)