

# ICNC 2013 Technical Program

San Diego, USA  
January 28-31, 2013  
<http://www.conf-icnc.org>



## Monday, January 28

**10:00 - 12:00**

### **Qualcomm Distinguished Lectures I: Current and Future Research Challenges in Smart Grid Networks**

Speaker: Abbas Jamalipour, Chair Professor of Ubiquitous Mobile Networking, University of Sydney, Australia

Room: Mission I

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

### **CNC I: Wireless Communications**

Room: Mariner Point

Chair: Behrooz Makki (Chalmers University of Technology, Sweden)

#### *Secure Spectrum Sharing via Rate Adaptation*

Behrooz Makki (Chalmers University of Technology, Sweden); Thomas Eriksson (Chalmers University of Technology, Sweden)

#### *Network Aware Application Dissemination in Prioritized Wireless Networks*

David Shur (Applied Communication Sciences, USA); Michael A Kaplan (Applied Communication Sciences, USA); Sunil Samtani (Telcordia Technologies Inc., USA); Tom Doong (Adaptive Methods, USA); Justin Kleffman (NGC, USA); Steve Kruse (Adaptive Methods, USA); Richard Coupland (Navy, USA); Devin Reid (Adaptive Methods, USA); Darren Osten (NGC, USA)

#### *Identifying and Quantifying the Android Device Users' Security Risk Exposure*

Lukas Jeter (University of Colorado, USA); Shivakant Mishra (University of Colorado, USA)

#### *Distributed Model Consensus for Models of Locally Biased Measurements in Wireless Sensor Networks*

Jacob Thompson (University of Maryland, Baltimore County, USA); Konstantinos Kalpakis (University of Maryland Baltimore County, USA)

#### *Intercarrier Interference Cancellation for Wideband OFDM in High Speed Aerial Vehicle Communication*

Qian Han (Wright State University, USA); Xue Li (Wright State University & IEEE Student Member, Member of Society of Women Engineers, USA); Michael A Temple (Air Force Institute of Technology, USA); Zhiqiang Wu (Wright State University, USA)  
*Opportunistic Routing Using Prefix Ordering and Self-Reported Social Groups*  
Qian Li (University of California, Santa Cruz, USA); Jj Garcia-Luna-Aceves (University of California at Santa Cruz, USA)

## **CNC II: Wireless Networking**

Room: Crown Point

Chair: Julian Cheng (University of British Columbia, Canada)

*Performance of Convolutional Coded OOK IM/DD Systems Over Strong Turbulence Channels*

Luanxia Yang (The University of British Columbia, Canada); Julian Cheng (University of British Columbia, Canada); Jonathan F Holzman (University of British Columbia (UBC) Okanagan, Canada)

*Fast Wireless Data Access Scheme in Wireless Networks*

Giwon Lee (Korea University, Korea); Insun Jang (Korea University, Korea); Sangheon Park (Korea University, Korea)

*The Impacts of User Dynamics on Energy-based Opportunistic Cooperative Spectrum Sensing in Cognitive Radio Networks over Log-normal Shadowed Rayleigh Fading Channels*

Chihkai Chen (University of California, Los Angeles, USA); Kung Yao (UCLA, USA)

*The Impact of GPS Positioning Errors on the Hop Distance in Vehicular Adhoc Networks (VANETs)*

Wen-Hsing Kuo (Yuan Ze University, Taiwan); Shih-Hau Fang (Yuan Ze University, Taiwan)

*Cost Effective ROF Communication System for CATV Channels over WDM Network and Fuzzy Modeling of the System*

Maryam Niknamfar (University of Texas at San Antonio, USA); Yashar Sahraei Manjili (The University of Texas at San Antonio, USA); Mohammad Jamshidi (University of Texas at San Antonio, USA); Mehdi Shadaram (The University of Texas at San Antonio, USA)

*A Road Based Multi-Channel Assignment Method for VANET*

Tong Zhao (Peking University, P.R. China); Shanbo Lu (Peking University, P.R. China); Wei Yan (Peking University, P.R. China); XiaoMing Li (Peking University, P.R. China)

## **CNTA: Converged Networks, Technologies and Applications**

Room: Mission III

Chairs: Eduardo Cerqueira (Federal University of Para & UFPA, Brazil), Jose M Gutierrez (Aalborg University, Denmark)

*Modeling and Delay Analysis for Converged Network-Cloud Service Provisioning Systems*

Qiang Duan (The Pennsylvania State University, USA)

*The Case for Heterogeneous WLAN Environments for Converged Networks*

Markus Gerhard Tauber (AIT Austrian Institute of Technology GmbH, Austria); Saleem N Bhatti (University of St Andrews, United Kingdom); Nikolay Melnikov (Computer Science Jacobs University Bremen, Germany); Jurgen Schonwalder (Jacobs University Bremen, Germany)

*Advanced Resource Provisioning in Context-Sensitive Converged Networks*

Jos Castillo Lema (Universidade da Corua, Spain); Elifranio Cruz (Universidade Federal do Cear & PPGETI, Brazil); Augusto Jose Venancio Neto, Ph. D. (Universidade Federal do Rio Grande do Norte & Centro de Cincias Exatas da Terra, Brazil); Eduardo Cerqueira (Federal University of Para & UFPA, Brazil)

#### **CPS I: Keynote Talk & Design in Healthcare**

Room: Mission II

Chair: He Huang (University of Rhode Island, USA)

*Keynote Talk - Dr. John Matyjas (Air Force Research Lab, USA)*

*An Integrated Health Management Process for Automotive Cyber-Physical Systems*

Chaitanya Sankavaram (University of Connecticut, USA); Anuradha Kodali (University of Connecticut, USA); Krishna Pattipati (University of Connecticut, USA)

*Terrain Recognition Improves the Performance of Neural-Machine Interface for Locomotion Mode Recognition*

Ding Wang (University of Rhode Island, USA); Lin Du (University of Rhode Island, USA); He Huang (University of Rhode Island, USA)

*Networked Bio-Inspired Modules For Sensorimotor Control of Wearable Cyber-Physical Devices*

Yong-Lae Park (Harvard University, USA); Diana Young (Harvard University, USA); Bor-rong Chen (Harvard University, USA); Robert Wood (Harvard University, USA); Radhika Nagpal (Harvard, USA); Eugene Goldfield (Harvard, USA)

*Computer Aided Rehabilitation for Patients with Rheumatoid Arthritis*

Vangelis Metsis (University of Texas at Arlington, USA); Pat Jangyodsuk (University of Texas at Arlington, USA); Vassilis Athitsos

(University of Texas at Arlington, USA); Maura Iversen (Northeastern University, USA); Fillia Makedon (University of Texas at Arlington, Greece)

**13:30 - 15:30**

**Qualcomm Distinguished Lecture II: Fog Computing: Leveraging Computation, Communications, and Storage at the Intelligent Edge**

Speaker: Flavio Bonomi, Cisco Fellow, Cisco, USA

Room: Mission I

Chair: Dilip Krishnaswamy (Qualcomm Research Center, USA)

**CNC III: Communication Software and Multimedia Applications**

Room: Mission III

Chair: Jose M Gutierrez (Aalborg University, Denmark)

*On Lossless and Lossy Compression of Step Size Matrices in JPEG Coding*

Wai C Chu (Lab126, USA)

*Application Layer FEC with Long Time Interleaver and Fast Tune-in for Mobile Satellite TV Services*

Valentina Pullano (University of Bologna, Italy); Cornelius Hellge (Fraunhofer Institute for Telecommunications - Heinrich-Hertz-Institute, Germany); Manuel Hensel (Fraunhofer Institute for Telecommunications - Heinrich-Hertz-Institute, Germany); Giovanni Emanuele Corazza (University of Bologna, Italy); Thomas Schierl (Fraunhofer HHI, Germany)

*An Edge Router Based Distributed Admissions Control Over Real-Time Media Streams*

Jun Liu (University of North Dakota, USA)

*Performance Improvement of the Segment SYNC-Based Spectrum Sensing for ATSC TV Signal*

Seung Joon Lee (Kangwon National University, Korea)

*Low RSSI in WLANs: Impact on Application-Level Performance*

Markus Gerhard Tauber (AIT Austrian Institute of Technology GmbH, Austria); Saleem N Bhatti (University of St Andrews, United Kingdom)

*Restorability on 3-connected WDM Networks Under Single and Dual Physical Link Failures*

Michael Jensen (Aalborg University, Denmark); Jose M Gutierrez (Aalborg University, Denmark); Tahir Riaz (Aalborg University, Denmark); Jens Myrup Pedersen (Aalborg University, Denmark)

#### **CNC IV: Communication Theory**

Room: Mariner Point

Chair: Samy S. Soliman (University of Alberta, Canada)

*Power Allocation for Time Division Broadcast Protocol over Rayleigh Fading Channels*

Dong-Woo Lim (Korea Advanced Institute of Science and Technology, Korea); Chang-Jae Chun (Korea Advanced Institute of Science and Technology, Korea); Jae-Hwan Lee (Korea Advanced Institute of Science and Technology, Korea); Hyung Myung Kim (Korea Advanced Institute of Science and Technology, Korea)

*Lagrangian Relaxation Approach for Low Complexity Channel Assignment in Multi-Cell WLANs*

Mohamed Elwekeil (Egypt-Japan University of Science and Technology, Egypt); Masoud Alghoniemy (Egypt-Japan University of Science and Technology, Egypt); Hiroshi Furukawa (Kyushu University, Japan); Osamu Muta (Kyushu University, Japan)

*TFRC-CR: An Equation-based Transport Protocol for Cognitive Radio Networks*

Abdulla Al-Ali (Northeastern University & Qatar University, USA); Kaushik Chowdhury (Northeastern University, USA)

*Utilizing Distance Distribution in Determining Topological Characteristics of Multi-hop Wireless Networks*

Husnu Narman (University of Oklahoma, USA); Turgay Korkmaz (University of Texas at San Antonio, USA); Suleyman Tek (University of the Incarnate Word, USA)

*Dual-Hop AF Systems With Maximum End-to-End SNR Relay Selection Over Nakagami-m and Rician Fading Links*

Samy S. Soliman (University of Alberta, Canada); Norman C. Beaulieu (University of Alberta, Canada)

*Coexistence Analysis of Adjacent Long Term Evolution (LTE) Systems*

Muhannad Aulama (Motorola Solutions, Inc., Jordan); Mohammed M. Olama (Oak Ridge National Laboratory, USA)

#### **CNC V: Next Generation Networking**

Room: Crown Point

Chair: Vinod M. Vokkarane (University of Massachusetts Dartmouth / Massachusetts Institute of Technology (MIT), USA)

*On the Rate-Distortion Performance of Compressive Sensing in Wireless Sensor Networks*

Mina Sartipi (University of TN at Chattanooga, USA)

*Improving Service Differentiation of Immediate and Advance Reservation in Resource-Partitioned Optical WDM Networks*

Derek Rousseau (University of Massachusetts Dartmouth, USA); Joan Triay (Universitat Politècnica de Catalunya (UPC), Germany); Vinod M. Vokkarane (University of Massachusetts Dartmouth / Massachusetts Institute of Technology (MIT), USA)

*Analytical Model of 3-level QoS Scheduling in Hybrid Optical Networks*

Giorgio Corazza (Università di Bologna, Italy); Walter Cerroni (University of Bologna, Italy); Gaia Leli (University of Bologna, Italy); Carla Raffaelli (University of Bologna, Italy); Michele Savi (Norwegian University of Science and Technology, Norway); Norvald Stol (Norwegian University of Science and Technology, Norway)

*Context-aware Social Computing: A Cognitive Approach*

Mozhgan Tavakolifard (Norwegian University of Science and Technology, Norway)

*Energy and Latency Impact of Outsourcing Decisions in Mobile Image Processing*

Ali Zaher (Oslo University, Norway); DÅ¼rr Niklas (University of Mannheim, Germany); Nicolas Stamer (University of Mannheim, Germany); Ali Ahmad (Oslo University, Norway)

*Enhanced Detection and Restoration of Low-Rate Denial-of-Service in Wireless Multi-Hop Networks*

Qiang Liu (National University of Defense Technology, P.R. China); Jianping Yin (School of Computer Science, National University of Defense Technology, P.R. China); Paria Jokar (University of British Columbia, Canada); Xiping Hu (University of British Columbia, Canada)

**CPS II: CPS System Modeling**

Room: Mission II

Chair: Bahador Amiri (University of California, Santa Cruz, USA)

*A framework for optimal assistive robot placement for event recognition*

Georgios Galatas (NCSR Demokritos, Greece); Alexandros Papangelis (NCSR Demokritos, Greece); Fillia Makedon (University of Texas at Arlington, Greece)

*Predicting Time-Delays under Real-Time Scheduling for Linear Model Predictive Control*

Zhenwu Shi (Georgia Institute of Technology, USA); Fumin Zhang (Georgia Institute of Technology, USA)

*Investigation of Uncertainties Associated with Actuation Modeling Error and Sensor Noise on Real Time Hybrid Simulation Performance*

Amin Maghareh (Purdue University, USA); Shirley Dyke (Purdue, USA); Ge Ou (Purdue University, USA); Yili Qian (Purdue University, USA)

*Sensor Data Modeling for Smart Meters - A Methodology to Compare Different Systems*

Dhiman Chattopadhyay (Tata Consultancy Services, India); Ranjan Dasgupta (Tata Consultancy Services Ltd, India); Arpan Pal (Tata Consultancy Services, India)

*QUIT: A Cross-Layer Routing Metric Based on Non-Utilized Outage Capacity*

Bahador Amiri (University of California, Santa Cruz, USA); Hamid Sadjadpour (University of California, Santa Cruz, USA)

*Optimal Byzantine Attacks on Distributed Detection in Tree-based Topologies*

Bhavya Kailkhura (Syracuse University, USA); Swastik Brahma (Syracuse University, USA); Pramod Varshney (Syracuse University, USA)

**16:00 - 18:00**

**Qualcomm Distinguished Lecture III: Recent Trends in Ad hoc, Sensor, and Mesh Networks: From Fundamental to Specialized Disaster-Resilient Applications**

Speaker: Nei Kato, Professor, Tohoku University, Japan

Room: Mission I

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

**CNC VI: Communications QoS**

Room: Mission III

Chair: Won Mee Jang (University of Nebraska-Lincoln, USA)

*Performance evaluation of RODEO: ROute DEgradation Optimization for the Multi-Hop Dynamic Spectrum Access Networks*

Erald Troja (CUNY Graduate Center, USA); Kenneth Ezirim (Graduate Center, City University of New York, USA); Shamik Sengupta (John Jay College of Criminal Justice, City University of New York (CUNY), USA); Michael Hannon (John Jay College, USA)

*A Theoretical Framework for Solving the Optimal Admissions Control With Sigmoidal Utility Functions*

Jun Liu (University of North Dakota, USA)

*Combined Green Resource and Topology Management for Beyond Next Generation Mobile Broadband Systems*

Salahedin Rehan Sarria (University of York, United Kingdom); David Grace (University of York, United Kingdom)

*Queueing with Transmission Rate Selection for Cognitive Radio Networks in Nakagami-m Fading*

Won Mee Jang (University of Nebraska-Lincoln, USA); Woan Chang (MITRE, USA)

*(Multiple) Channel Acquisition and Contention Handling Mechanisms for Dynamic Spectrum Access in a Distributed System of Cognitive Radio Networks*

Kenneth Ezirim (Graduate Center, City University of New York, USA); Shamik Sengupta (John Jay College of Criminal Justice, City University of New York (CUNY), USA); Erald Troja (CUNY Graduate Center, USA)

### **CNC VII: Signal Processing for Communications**

Room: Mariner Point

Chair: Valentina Pullano (University of Bologna, Italy)

*Deadline-Aware Co-Scheduling Using Anycast Advance Reservations in Wavelength Routed Lambda Grids*

Hitesh Kulkarni (University of Massachusetts Dartmouth, USA); Arush G Gadkar (University of Massachusetts, Dartmouth, USA); Vinod M. Vokkarane (University of Massachusetts Dartmouth / Massachusetts Institute of Technology (MIT), USA)

*Interference Aware Scheduling for Peak Channel Reuse and Max-Capacity In Smart Meter Networks*

Kranthi Manoj (The University of Texas at San Antonio, USA); Amir Rajae (The University of Texas at San Antonio, USA); Brian T Kelley (University of Texas at San Antonio, USA); Mohammad Jamshidi (University of Texas at San Antonio, USA)

*Coherent Power Combining on Spacecraft via Wavefront Multiplexing Techniques*

Hen-Geul Yeh (California State University, Long Beach, USA)

*Symbol-Index-Feedback Polar Coding Schemes for Low-Complexity Devices*

Xudong Ma (Pattern Technology Lab LLC, USA)

*BER Modeling for Interference Canceling FIR Wiener Equalizer*

Tamoghna Roy (DSPRL - Wireless@VT, USA); A. A. (Louis) Beex (DSPRL - Wireless@VT & Virginia Tech, USA)

### **CNC VIII: Wireless Systems**

Room: Crown Point

Chair: James Gross (Royal Institute of Technology (KTH), Sweden)



*The Outage Performance of Realtime Transmission in Multiple Asynchronous Relays Enhanced OFDM System*

Yulin Hu (RWTH Aachen University & UMIC Research Centre, Germany); James Gross (Royal Institute of Technology (KTH), Sweden); Zhizhong Ding (Hefei University of Technology, P.R. China)

*Approximating The Outage Capacity of Asymmetric 2x2 Dual-Polarized MIMO at High SNR*

Farzad Talebi (University of Notre Dame, USA); Thomas Pratt (University of Notre Dame, USA)

*An Optimized LDPC product network coding scheme in multiple access relay system*

Zhanji Wu (BUPT, P.R. China); Xiang Chen (Beijing University of Post and Telecommunications, P.R. China)

*Numerically Efficient Direct-Optimization Filter Design*

Juan Fang (Polytechnic Institute of New York University, USA); I-Tai Lu (Polytechnic Institute of NYU, USA)

*Cross Layer Optimization for Efficient Spectrum Utilization in Cognitive Radios*

Ali Haider Mahdi (Ilmenau University of Technology, Germany); Mohamed Abdrabou Ahmed Kalil (Ilmenau University of Technology, Germany); Andreas Mitschele-Thiel (Ilmenau University of Technology, Germany)

### **CPS III: Networked CPS Design**

Room: Mission II

Chair: Sunil Kumar (San Diego State University, USA)

*Adaptive Fault-Tolerance for Cyber-Physical Systems*

C. m. Krishna (University of Massachusetts, USA); Israel Koren (University of Massachusetts, USA)

*The High Level Architecture RTI as a master to the Functional Mock-up Interface components*

Muhammad Usman Awais (AIT Austrian Institute of Technology GmbH, Austria); Peter Palensky (Austrian Institute of Technology, Austria); Atiyah Elsheikh (Austrian Ins, Austria); Edmund Widl (Austrian Institute of Technology, Austria); Matthias Stifter (AIT Austrian Institute of Technology, Austria)

*Effects of Femtocell Deployment on Interference to Macrocell Users in a Cellular Network*

Avani Dalal (University of Cincinnati, USA); Hailong Li (University of Cincinnati, USA); Dharma P Agrawal (University of Cincinnati, USA)

*Spoofing Cyber Attack Detection in Probe-based Traffic Monitoring Systems using Mixed Integer Linear Programming*

Edward Canepa (King Abdullah University of Science and Technology, Saudi Arabia); Christian Claudel (Kaust University, USA)

*Lightweight Internet Protocols for Web Enablement of Sensors using Constrained Gateway Devices*

Soma Bandyopadhyay (TATA Consultancy Services, India); Abhijan Bhattacharyya (Tata Consultancy Services Ltd., India)

*Ongoing Challenges in Automated Cyberphysical Cross-Domain Design*

Kunal Arya (University of California, Santa Barbara, USA); Joseph Poverelli (University of California, Santa Barbara, USA); Forrest Brewer (University of California, Santa Barbara, USA)

## **Tuesday, January 29**

**08:30 - 09:30**

**Keynote Talk: A Clean Slate Approach to Secure Protocols for Wireless Networks**

Speaker: P. R. Kumar, Professor and College of Engineering Chair in Computer Engineering, Texas A&M University, USA

Room: Mission I

Chair: Guoliang Xue (Arizona State University, USA)

**10:00 - 12:00**

**Qualcomm Distinguished Lecture IV: One New Algorithm for Ten New Applications**

Speaker: Charles Elkan, Professor, University of California, San Diego, USA

Room: Mission I

Chair: Dilip Krishnaswamy (Qualcomm Research Center, USA)

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

Room: Mariner Point

Chair: Zhenlong Yuan (Tsinghua University, P.R. China)

*Self-Healing Group Key Distribution with Extended Revocation Capability*

Tomasz Rams (AGH University of Science and Technology, Poland);

Piotr Pacyna (AGH University of Science and Technology, Poland)

*Establishing Secure Measurement Matrix For Compressed Sensing Using Wireless Physical Layer Security*

Ruslan Dautov (Rochester Institute of Technology, USA); Gill R Tsouri (Rochester Institute of Technology, USA)  
*TFD: A Multi-pattern Matching Algorithm for Large-scale URL Filtering*  
Zhenlong Yuan (Tsinghua University, P.R. China); Baohua Yang (Tsinghua University, P.R. China); Xiaoqi Ren (Tsinghua University, P.R. China); Yibo Xue (Tsinghua university, P.R. China)  
*VEGK: Virtual ECC Group Key for Wireless Sensor Networks*  
Ahmed E. El-Din (Cairo University, Egypt); Rabie Ramadan (Cairo University, Egypt); Magda Fayek (Cairo University, Egypt)  
*IEEE 802.11 Anomaly-based Behavior Analysis*  
Hamid Alipour (University of Arizona & NSF Center for Autonomic Computing, USA); Youssif Al-Nashif (University of Arizona, USA); Salim Hariri (University of Arizona, USA)  
*A Comprehensive Platform-Independent Computational Complexity Analysis for a Class of Symmetric Cryptosystems*  
Walid Y Zibideh (Qualcomm Inc., USA); Mustafa Muhammad Matalgah (University of Mississippi, USA)

#### **OGN: Optical and Grid Networking**

Room: Crown Point

Chairs: Ashwin A Gumaste (Indian Institute of Technology, Bombay, India), Weisheng Xie (University of Texas at Dallas, USA)

*Dynamic RMSA in Spectrum-Sliced Elastic Optical Networks for High-Throughput Service Provisioning*

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

*Flexible Transport Network Expansion via Open WDM Interfaces*

Anna Manolova Fagertun (Technical University of Denmark, Denmark); Bjarke Skjoldstrup (TDC A/S, Denmark)

*On the Efficacy of WDM Virtual Topology Design Strategies*

Xuezhou Ma (North Carolina State University, USA); Khaled Harfoush (North Carolina State University, USA)

*Regenerator Site Selection and Regenerator Placement for Mixed Line Rate Optical Networks*

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

Palacharla (FLA, USA); Motoyoshi Sekiya (Fujitsu Laboratories of America, Inc., USA)

*Circuit Performance in a Packet Network: Demonstrating Integrated Carrier Ethernet Switch Router (CESR) + Optical Transport Network (OTN)*

Sarvesh Sanjay Bidkar (Indian Institute of Technology Bombay, India); Saurabh Mehta (Indian Institute of Technology, Bombay, India); Deval Bhamare (IIT Bombay, India); Nilesh Bajaj (IIT Bombay, India); Abhishek Medhekar (IIT Bombay, India); Ashwin A Gumaste (Indian Institute of Technology, Bombay, India)

## **WC I: Wireless Communications I**

Room: Mission III

Chair: Jialing Li (InterDigital Communications LLC, USA)

*Flexible Companding Design for PAPR Reduction in OFDM and FBMC Systems*

Zihao You (Polytechnic Institute of New York University, USA); I-Tai Lu (Polytechnic Institute of NYU, USA); Rui Yang (Interdigital, USA); Jialing Li (InterDigital Communications LLC, USA)

*On the Throughput Evaluation of Wireless Mesh Network Deployed in Disaster Areas*

Thuan Ngo (Tohoku University, Japan); Hiroki Nishiyama (Tohoku University, Japan); Nei Kato (Tohoku University, Japan); Yoshitaka Shimizu (NTT, Japan); Kohei Mizuno (NTT, Japan); Tomoaki Kumagai (NTT Corporation, Japan)

*Improved Wideband Spectrum Sensing Techniques Using Wavelet-Based Edge Detection for Cognitive Radio*

Said E. El-Khamy (Alexandria University, Egypt); Mohamed El-Mahallawy (Arab Academy for science and technology, Egypt); El-Nasser Youssef (Arab Academy for Science & Technology & Maritime Transport & College of Engineering and Technology, Egypt)

*Low-complexity Iterative Demapping for Rotated QAM Constellations in DVB-T2 System*

Feng Yang (Shanghai Jiaotong University, P.R. China); Bo Zhang (Shanghai Jiaotong University, P.R. China); Lianghai Ding (Shanghai Jiao Tong University, P.R. China)

*A New Analysis of the DS-CDMA Cellular Downlink Under Spatial Constraints*

Matthew Valenti (West Virginia University, USA); Don Torrieri (US Army Research Laboratory, USA); Salvatore Talarico (West Virginia University, USA)

*An Initial Study of DSA Cost and Capacity Trades under Imperfect Awareness*

Todd Martin (George Mason University & Science and Technology Associates, Inc., USA); Kuochu Chang (George Mason University, USA)

**13:30 - 14:30**

**Plenary Talk: Strategic Design: Tripling the Spectrum Efficiency**

Speaker: Mihaela van der Schaar, Chancellor's Professor, University of California, Los Angeles, USA

Room: Mission I

Chair: Guoliang Xue (Arizona State University, USA)

**13:30 - 15:30**

**CLD: Cloud Computing and Networking**

Room: Mariner Point

Chairs: Ek Park (CSU-Chico, USA), Jiang Zhu (Carnegie Mellon University, USA)

*e-Healthcare Cloud Computing Application Solutions*

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

*Improved P2P Content Discovery by Exploiting User Social Patterns*

Reza Farahbakhsh (Institut Mines-Telecom, Telecom Sud-Paris & Paris VI, France); Noel Crespi (Institut TÃ©lÃ©com, TÃ©lÃ©com SudParis, France); Angel Cuevas (Institut Mines-TÃ©lÃ©com, TÃ©lÃ©com SudParis, France); Neetya Shrestha (Telecom SudParis, France); Mehdi Mani (Institut TELECOM, Telecom SudParis, France); Poompat Saengudomlert (Asian Institute of Technology, Thailand)

*Cloud-Hosted Key Sharing Towards Secure and Scalable Mobile Applications in Clouds*

Piotr Tysowski (University of Waterloo, Canada); Anwar Hasan (University of Waterloo, Canada)

*DAROS: Distributed User-Server Assignment And Replication For Online Social Networking Applications*

Thuan Duong-Ba (Oregon State University, USA); Thinh Nguyen (Oregon State, USA); Duc A. Tran (University of Massachusetts Boston, USA)

*Somersault Cloud: Toward a cloud-of-clouds Service for Personal Backup*

Huajian Mao (National University of Defense and Technology, P.R. China); Nong Xiao (National University of Defense Technology, P.R. China); Lu Yutong (NUDT, P.R. China); Haifeng Xu (WuLuMuQi General Hospital of LanZhou Military Region, P.R. China)

*Profit Maximization and Power Management of Green Data Centers  
Supporting Multiple SLAs*

Mahdi Ghamkhari (University of California at Riverside, USA); Hamed Mohsenian-Rad (University of California at Riverside, USA)

**SPC: Signal Processing for Communications**

Room: Crown Point

Chair: Yiming Chen (Western Digital Corporation, USA)

*A Low Power 100 Gbps DP-QPSK Receiver Using Analog Domain Signal Processing*

Nandakumar Nambath (Indian Institute of Technology, Bombay, India); Anita Gupta (Bhabha Atomic Research Centre, India); Shalabh Gupta (IIT Bombay, India)

*Novel Fast MUSIC Algorithm for Spectral Estimation with High Subspace Dimension*

Hongting Zhang (Louisiana State University, USA); Hsiao-Chun Wu (Louisiana State University, USA); Shih Yu Chang (National Tsing Hua University of Taiwan, Taiwan)

*Clustered Linear Precoding for Downlink Network MIMO Systems With Partial CSI*

Mehdi Sadeghzadeh (The University of Akron, USA); Hamid Reza Bahrami (The University of Akron, USA); Nghi H Tran (University of Akron, USA)

*Reduced Complexity Super-Trellis Decoding for Convolutionally Encoded Transmission Over ISI-Channels*

Fabian Schuh (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany); Andreas Schenk (University of Erlangen-Nuremberg, Germany); Johannes Huber (University of Erlangen-Nuremberg, Germany)

*Exact Trigonometric Superfast Inverse Covariance Representations*

Ricardo Merched (Universidade Federal do Rio de Janeiro, Brazil)

*Performance-Complexity Trade-offs of the 2-D Iterative Feedback Signal Detection Algorithm*

Yiming Chen (Western Digital Corporation, USA); Shayan Garani Srinivasa (Indian Institute of Science, India)

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

Room: Mission III

Chairs: Irfan S. Al-Anbagi (School of Electrical Engineering and Computer Science University of Ottawa, Canada), Amine Didioui (CEA/Leti - Minatec & University of Rennes 1, France)

*Channel Capacity Related Power Allocation for distributed Sensor Networks with Application in Object Classification*

Gholamreza Alirezaei (RWTH Aachen University, Germany); Rudolf Mathar (RWTH Aachen University, Germany)

*Ambiguity Resolution in RSS-Based Emitter Geolocation*

Sichun Wang (Communications Research Centre, Industry Canada, Canada); Robert J. Inkol (Defence R&D Canada, Canada); Brad Jackson (Defence R&D Canada, Canada); Shanzeng Guo (Defence R&D Canada, Canada)

*A Novel Socially-Aware Opportunistic Routing Algorithm in Mobile Social Networks*

Gary K. W. Wong (The Hong Kong Institute of Education, Hong Kong); Xiaohua Jia (City University of Hong Kong, Hong Kong)

*On the Optimal Transmission Distance for Power-aware Routing in Ad hoc Networks*

Ahmed E.A.A. Abdulla (Tohoku University, Japan); Zubair Md. Fadlullah (Tohoku University, Japan); Hiroki Nishiyama (Tohoku University, Japan); Nei Kato (Tohoku University, Japan)

*RFID Range Extension with Low-power Wireless Edge Devices*

Li Chen (University of Rochester, USA); He Ba (University of Rochester, USA); Wendi Heinzelman (University of Rochester, USA); Andre Cote (Omni-ID Corporation, USA)

*CTA: a Collaborative Tracking Algorithm in Wireless Sensor Networks*

Ibtissem Boulanouar (LIGM - University Paris-Est, France); Stephane Lohier (University of Paris-Est, France); Abderrezak Rachedi (University Paris-Est Marne-la-Vallée, France); Gilles Roussel (Université Paris-Est, France)

**14:30 - 15:30**

**Plenary Talk: 1000x Capacity Gain by Small Cell Densification**

Speaker: Mehmet Yavuz, Senior Director, Qualcomm, USA

Room: Mission I

Chair: Guoliang Xue (Arizona State University, USA)

**16:00 - 18:00**

**Invited Position Talks I**

Room: Mission I

Chair: Bane Vasić (University of Arizona, USA)

*Dealing with Exponential Growth in Wireless Video*

Jerry D Gibson (University of California, Santa Barbara, USA)

*PHY-APP Cross-Layer Wireless Video Transmission*

Pamela Cosman (University of California, San Diego, USA)

*Detection for Two-Dimensional Magnetic Recording Systems*

Seyed Mehrdad Khatami (University of Arizona & Sharif University, USA); Bane Vasić (University of Arizona, USA)

### **Invited Papers I**

Room: Mission III

Chairs: Kui Cai (Data Storage Institute, Singapore), Utsav Kumar (University of Notre Dame, USA)

*Testing Access Control and Obligation Policies*

Dianxiang Xu (Dakota State University, USA); Michael Sanford (Dakota State University, USA); Zhaoliang Liu (Dakota State University, USA); Mark Emry (Sioux Falls School District, USA); Brad Brockmueller (Sioux Falls School District, USA); Spencer Johnson (Pomona College, USA); Michael To (Georgia State University, USA)

*Traffic Classification: Issues and Challenges*

Yibo Xue (Tsinghua university, P.R. China); 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)

*Channel Capacity and Soft-Decision Decoding of LDPC Codes for Spin-Torque Transfer Magnetic Random Access Memory (STT-MRAM)*

Kui Cai (Data Storage Institute, Singapore); Zhiliang Qin (Data Storage Institute, Singapore); Bingjin Chen (Data Storage Institute, Singapore)

*QoE Evaluations for Video Streaming over eMBMS*

Utsav Kumar (University of Notre Dame, USA); Ozgur Oyman (Intel Corporation, USA)

### **GCNC: Green Computing, Networking and Communications**

Room: Crown Point

Chairs: Lorenzo Di Gregorio (Intel Mobile Communications GmbH & Lantiq Deutschland GmbH, Germany), Yi Zhu (Hawaii Pacific University, USA)

*Energy Saving Improvements in IP Networks Through Table Lookup Bypass in Router Line Cards*



Angelo Coiro (University of Rome "La Sapienza", Italy); Marco Polverini (University "La Sapienza" Roma, Italy); Antonio Cianfrani (University of Rome "La Sapienza", Italy); Marco Listanti (University of Rome "La Sapienza", Italy)

*A robust optimization approach for energy-aware routing in MPLS networks*

Bernardetta Addis (Università degli Studi di Torino, Italy); Antonio Capone (Politecnico di Milano, Italy); Giuliana Carello (Politecnico di Milano, Italy); Luca Gianoli (Politecnico di Milano & École Polytechnique de Montréal, Italy); Brunilde Sansó (École Polytechnique de Montreal, Canada)

*Impact of Mobile Transmitter Sources on Radio Frequency Wireless Energy Harvesting*

Antonio Hernandez Coarasa (Northeastern University, Spain); Prusayon Nintanavongsa (Northeastern University, USA); Sugata Sanyal (Tata Institute of Fundamental Research Mumbai, India); Kaushik Chowdhury (Northeastern University, USA)

*Energy-efficient IPTV Simulcast over Fixed WiMAX Access Systems*

Yi Zhu (Hawaii Pacific University, USA); Xiaofeng Gao (Shanghai Jiao Tong University, P.R. China); Weili Wu (UT Dallas, USA); Jason P. Jue (University of Texas at Dallas, USA)

*Energy Budget Simulation for Deep Packet Inspection*

Lorenzo Di Gregorio (Intel Mobile Communications GmbH & Lantiq Deutschland GmbH, Germany)

*Analysis of Energy Efficiency in Dynamic Optical Networks Employing Solar Energy Sources*

Jiayuan Wang (Technical University of Denmark, Denmark); Anna Manolova Fagertun (Technical University of Denmark, Denmark); Sarah Ruepp (Technical University of Denmark, Denmark); Lars Dittmann (Technical University of Denmark, Denmark)

**WN I: Wireless Networks I**

Room: Mariner Point

Chairs: Paul J. Gendron (SSC-Pacific & SSC Pacific, Building 1, USA), Manish Wadhwa (South University - Virginia Beach, USA)

*Towards 60GHz Wireless Switching Interconnect*

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

*Efficient Support for Video Communications in Wireless Home Networks*

Andrea Vesco (Istituto Superiore Mario Boella, Italy); Enrico Masala (Politecnico di Torino, Italy); Riccardo M. Scopigno (Istituto Superiore Mario Boella, Italy)

*Study on Real Energy Consumption of Large-scale Campus Wireless Network*  
Wenqi Sun (Tsinghua University, P.R. China); Hewu Li (Tsinghua University, P.R. China); Jianping Wu (Tsinghua University, P.R. China)

*Protocol Independent Multicast: from Wired to Wireless Networks*  
Alessandro Russo (University of Trento, Italy); Renato Lo Cigno (University of Trento, Italy); Izhak Rubin (University of California at Los Angeles, USA)

*Novel DCF-based Multi-User MAC Protocol and Dynamic Resource Allocation for OFDMA WLAN Systems*  
Takuya Mishima (Osaka University, Japan); Shinichi Miyamoto (Osaka University, Japan); Seiichi Sampei (Osaka University, Japan); Wenjie Jiang (NTT Network Innovation Laboratories, NTT Corporation & Research Engineer, Japan)

## **Wednesday, January 30**

**08:30 - 09:30**

**Keynote Talk: Architecture for High Speed, Large Volume and Low Delay Data Transport Networks**

Speaker: Vincent W. S. Chan, Joan and Irwin Jacobs Professor, MIT, USA

Room: Mission I

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

**10:00 - 12:00**

**Qualcomm Distinguished Lecture V: Emerging topics in LTE-Advanced Networks**

Speaker: Yongbin Wei, Director, Qualcomm, USA

Room: Mission I

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

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

Room: Mariner Point

Chair: Shui Yu (Deakin University, Australia)

*A Hierarchical PCA-based Anomaly Detection*

Tian Biming (Curtin University, Australia); Kathryn E Merrick (University of New South Wales & Australian Defence Force Academy, Australia); Shui Yu (Deakin University, Australia); Jiankun Hu (University of New South Wales, Australia)

*HIDEINSIDE - A Novel Randomized & Encrypted Antiforensic Information Hiding*

Avinash Srinivasan (George Mason University, USA); Srinath Thirthahalli Nagaraj (George Mason University, USA); Angelos Stavrou (George Mason University, USA)

*Towards Secure and Context-Aware Information Lookup for the Internet of Things*

Michalis Giannikos (AUEB, Greece); Korina Kokoli (AUEB, Greece); Nikos Fotiou (Mobile Multimedia Lab, Athens University of Economics and Business, Greece); Giannis F. Marias (Athens University of Economics and Business, Greece); George C. Polyzos (Athens University of Economics and Business, Greece)

*Harnessing Many-core Processors for Scalable, Highly Efficient, and Adaptable Firewall Solutions*

Robert E Benner (Sandia National Laboratories, USA); Victor Echeverria (Sandia National Laboratories, USA); Uzoma Onunkwo (Sandia National Lab, USA); Jay Patel (Sandia National Laboratories, USA); David J Zage (Sandia National Laboratories, USA)

*Automated Malware Classification based on Network Behavior*

Saeed Nari (University of New Brunswick, Canada); Ali A. Ghorbani (University of New Brunswick, Canada)

**MCC: Multimedia Computing and Communications**

Room: Crown Point

Chairs: Mea Wang (University of Calgary, Canada), Yimin Zhou (University of Electronic Science and Technology of China, P.R. China)

*Intra Frame Constant Rate Control Scheme for High Efficiency Video Coding*

Yimin Zhou (University of Electronic Science and Technology of China, P.R. China); Ling Tian (University of Electronic Science and Technology of China, P.R. China); Xuecheng Ning (University of Electronic Science and Technology of China, P.R. China)

*Mitigating the Asymmetric Interests Among Peers in Peer-to-Peer Video-on-Demand Systems*

Saikat Sarkar (University of Calgary, Canada); Mea Wang (University of Calgary, Canada)

*A New Video Sharing by Communication and Analysis of Region of Interest on Panoramic Video*

Daisuke Ochi (NTT Corporation, Japan); Hideaki Kimata (NTT Corporation, Japan); Hajime Noto (NTT Corporation, Japan); Akira Kojima (Nippon Telegraph and Telephone Corporation, Japan)

*Multi-Source IPTV Networks: Zap Time and Bandwidth Optimization*

Daniel Bailey (University of Oklahoma, USA); Yuh-Rong Chen (University of Oklahoma, USA); Sridhar Radhakrishnan (University of Oklahoma, USA); Suleyman Karabuk (University of Oklahoma, USA)  
*Low-Complexity FPGA Implementation of Compressive Sensing Reconstruction*

Jerome Stanislaus (University of Maryland, Baltimore County, USA); Tinoosh Mohsenin (University of Maryland Baltimore County, USA)  
*A Novel Scalable Video Streaming System on P2P Networks*  
Kai-Lung Hua (National Taiwan University of Science and Technology, Taiwan); Ge-Ming Chiu (National Taiwan University of Science and Technology, Taiwan); Tai-Lin Chin (National Taiwan University of Science and Technology, Taiwan); Hsing-Kuo Pao (National Taiwan University of Science and Technology, Taiwan); Yi-Chi Cheng (Apexx Technology Corp., Taiwan); Guan-Ming Su (Dolby Lab, USA)

## **WC II: Wireless Communications II**

Room: Mission III

Chair: John F. An (National Taiwan Ocean University, Taiwan)

*Passenger Influence on the Performance of Time Reversal in Intra-Vehicular Environment*

François Bellens (Université Libre de Bruxelles (ULB), Belgium); David Lautru (University Paris 06, France); Jean-Michel Dricot (Université Libre de Bruxelles, Belgium); François Horlin (Université Libre de Bruxelles, Belgium); Aziz Benlarbi-Dela (UPMC University Paris 06, France); Philippe De Doncker (ULB, Belgium)

*Relay Selection and Power Allocation in Amplify-and-Forward Cognitive Radio Systems*

Krishna Ram Budhathoki (The University of Akron, USA); Mehdi Maleki (The University of Akron, USA); Hamid Reza Bahrami (The University of Akron, USA)

*Closing the Gap to the Capacity of APSK: Constellation Shaping and Degree Distributions*

Xingyu Xiang (West Virginia University, USA); Matthew Valenti (West Virginia University, USA)

*Exploiting Cross-Layer Packet Overhearing for Opportunistic Distributed STC in Wireless Relay Networks*

Antonios Argyriou (University of Thessaly & CERTH, Greece)

*Optimal Pre-weighting Scheme for Spatially Correlated MIMO-OFDM Wireless System with Subcarrier Cluster Constraint*

John F. An (National Taiwan Ocean University, Taiwan)

*Transmit Precoding based on Outdated Interference Alignment for Two Users Multi Cell MIMO System*

Danish Aziz (Alcatel-Lucent Bell Labs, Germany); Andreas Weber (Alcatel-Lucent, Germany)

**13:30 - 14:30**

**Plenary Talk: Evolution of Digital Video Compression - from Primordial Soup to Homo sapiens**

Speaker: Ajay Luthra, Vice President, Motorola Mobility, USA

Room: Mission I

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

**13:30 - 15:30**

**COG: Cognitive Computing and Networking**

Room: Mission III

Chair: Erik Blasch (Air Force Research Lab, USA)

*Effective Capacity Optimization for Cognitive Radio Network Based on Underlay Scheme in Gamma Fading Channels*

Mohamed Elalem (Ryerson Canada, Canada); Lian Zhao (Ryerson University, Canada)

*An Improved LFS Engine for Physical Layer Security Augmentation in Cognitive Networks*

Paul Harmer (Air Force Institute of Technology, USA); Michael A Temple (Air Force Institute of Technology, USA)

*Cooperative Resource Allocation in OFDM-Based Multicell Cognitive Radio Systems*

Qianyu Yang (Nanjing University, P.R. China); Shaowei Wang (Nanjing University, P.R. China); Mengyao Ge (Nanjing University, P.R. China)

*A Location-Aided Routing Protocol for Cognitive Radio Networks*

Karim Habak (Egypt-Japan University of Science and Technology, Egypt); Mohammed Abdelatif (Egypt-Japan University of Science and Technology (EJUST), Egypt); Hazem Hagrass (Egypt-Japan University of Science and Technology (EJUST), Egypt); Karim Rizc (Egypt-Japan University of Science and Technology (EJUST), Egypt); Moustafa Youssef (Egypt-Japan University of Science and Technology (EJUST), Egypt)

*A Priority-aware Channel Selection Scheme for Real-time Data Transmission in Cognitive Radio Networks*

Norooz Motamedi (San Diego State University, USA); Sunil Kumar (San Diego State University, USA); Fei Hu (University of Alabama, USA); Nathaniel W Rowe (Air Force Research Laboratory, USA)  
*A Neural Network Approach to Category Validation of Android Applications*  
Mo Ghorbanzadeh (Virginia Tech & The Hume Center for National Security and Technology, USA); Yang Chen (Virginia Tech, USA); Kevin Ma (Virginia Tech, USA); T. Charles Clancy (Virginia Tech, USA); Robert McGwier (Virginia Tech, USA)

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

Room: Crown Point

Chairs: Mea Wang (University of Calgary, Canada), Ying Zhang (Carnegie Mellon Silicon Valley, USA)

*Clustering algorithm based on minimal path loss ratio for vehicular communication*

Yamini Harikrishnan (Samsung India Software Operations, India); Jianhua He (Aston University, United Kingdom)

*Practical Provably Secure Key Sharing for Near Field Communication Devices*

Ahmed Elbagori (Alexandria University, Egypt); Ahmed Youssef (Alexandria University, Egypt); Mohamed Elnobi (Alexandria University, Egypt); Moustafa Youssef (Egypt-Japan University of Science and Technology (E-JUST), Egypt)

*MAC and Application-Level Broadcast Reliability in VANETs with Channel Fading*

Xiaomin Ma (Oral Roberts University, USA); Xiaoyan Yin (Duke University, USA); Matthew Wilson (Oral Roberts University, USA); Kishor S. Trivedi (Duke University, USA)

*Near-Optimal Packet Allocation Algorithm for Content Uploading to Media Cloud via Collaborative Wireless Network*

Ge Zhang (Nanyang Technological University, Singapore); Yonggang Wen (Nanyang Technological University, Singapore); Yew Soon Ong (School of Computer Engineering, Nanyang Technological University, Singapore)

*A Node Management Scheme for R2V Connections in RSU-Supported Vehicular Adhoc Networks*

Wen-Hsing Kuo (Yuan Ze University, Taiwan); Yen-Shien Tung (Yuan Ze University, Taiwan); Shih-Hau Fang (Yuan Ze University, Taiwan)

*CAREFOR: Collision-Aware RELiable FORwarding Technique for Vehicular Ad hoc Networks*

Anna Maria Vegni (University of ROMA TRE, Italy); Ahmad Mostafa (University of Cincinnati, USA); Dharma P Agrawal (University of Cincinnati, USA)

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

Room: Mariner Point

Chairs: Irfan S. Al-Anbagi (School of Electrical Engineering and Computer Science University of Ottawa, Canada), Amine Didioui (CEA/Leti - Minatec & University of Rennes 1, France)

*EgyHet: An Energy-Saving Routing Protocol for Wireless Heterogeneous Sensor Networks*

Xiao Chen (Texas State University, USA); Zanzun Dai (Texas State University, USA); Hongchi Shi (Texas State University-San Marcos, USA)

*Scheduling Problems in Interference-Aware Wireless Sensor Networks*

Nhat X Lam (University of Texas at Dallas, USA); Min Kyung An (University of Texas at Dallas, USA); Dung Huynh (University of Texas at Dallas, USA); Trac Ngoc Nguyen (Raytheon Systems, USA)

*Scheduled Channel Access Using Geographical Classification*

Ashok N Masilamani (University of California, Santa Cruz, USA); Jj Garcia-Luna-Aceves (University of California at Santa Cruz, USA)

*Measuring the Efficiency of the Sensing Process in a Wireless Sensor Network*

Bryan Larish (Georgia Institute of Technology, USA); George Riley (Georgia Institute of Technology, USA)

*A Realistic and Stable Markov-based Model for WSNs*

Irfan S. Al-Anbagi (School of Electrical Engineering and Computer Science University of Ottawa, Canada); Mounib Khanafer (University of Ottawa, Canada); Hussein T Mouftah (University of Ottawa, Canada)

*HarvWSNet: A Co-Simulation Framework for Energy Harvesting Wireless Sensor Networks*

Amine Didioui (CEA/Leti - Minatec & University of Rennes 1, France); Carolynn Bernier (CEA/Leti - Minatec, France); Dominique Morche (CEA Leti, France); Olivier Sentieys (IRISA, University of Rennes 1, France)

**14:30 - 15:30**

**Plenary Talk: Understanding Behavior in a Networked World via Social Media Data**

Speaker: Huan Liu, Professor, Arizona State University, USA

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

**16:00 - 18:00**

**Invited Position Talks II**

Room: Mission I  
Chair: Erik Blasch (Air Force Research Lab, USA)  
*Ad-Hoc Networks at Global Scale*  
Rene L. Cruz (University of California, San Diego, USA)  
*Wireless Network Virtualization*  
Xin Wang (University of Pittsburgh, USA); David Tipper (University of Pittsburgh, USA)  
*Trends in Survivable/Secure Cognitive Networks*  
Erik Blasch (Air Force Research Lab, USA); Timothy Busch (Air Force Research Lab, USA); Sunil Kumar (San Diego State University, USA); Khanh D Pham (The U.S. Air Force Research Laboratory & Space Vehicles Directorate, USA)

**Invited Papers II**

Room: Mission III  
Chair: William H. Robinson (Vanderbilt University, USA)  
*Storage codes - coding rate and repair locality*  
Henk D.L. Hollmann (Nanyang Technological University, Singapore)  
*Two Dimensional-IP Routing*  
Mingwei Xu (Tsinghua University, P.R. China); Shu Yang (University of Tsinghua, P.R. China); Dan Wang (The Hong Kong Polytechnic University, Hong Kong); Jianping Wu (Tsinghua University, P.R. China)  
*Polar Codes for Data Storage Applications*  
Gabi Sarkis (McGill University, Canada); Warren Gross (McGill University, Canada)  
*Resilient and Efficient MANET Aerial Communications for Search and Rescue Applications*  
William H. Robinson (Vanderbilt University, USA); Adrian Lauf (University of Louisville, USA)

**ISA: Internet Services and Applications**

Room: Crown Point



Chairs: Rajkumar Kettimuthu (Argonne National Lab, USA), George C. Polyzos (Athens University of Economics and Business, Greece)

*Storage Replication in Information-Centric Networking*

Paris Flegkas (University of Thessaly, Greece); Vasilis Sourlas (University of Thessaly & CERTH-ITI, Greece); George Parisis (University of Cambridge, United Kingdom); Dirk Trossen (University of Cambridge, United Kingdom)

*Efficient Real-time Information Delivery in Future Internet Publish-Subscribe Networks*

Christos Tsilopoulos (Athens University of Economics and Business, Greece); Ioannis Gasparis (Athens University of Economics and Business, Greece); George Xylomenos (Athens University of Economics and Business, Greece); George C. Polyzos (Athens University of Economics and Business, Greece)

*Characterizing Throughput Bottlenecks for Secure GridFTP Transfers*

Gayane Vardoyan (The Computation Institute at UChicago and Argonne National Labs, USA); Rajkumar Kettimuthu (Argonne National Lab, USA); Michael Link (Argonne National Laboratory, USA); Steve Tuecke (Deputy Director at The University of Chicago's Computation Institute, USA)

*A Highly-Extensible Architecture for Networked I/O*

Cynthia B Taylor (Oberlin College, USA); Joseph Pasquale (University of California, San Diego, USA)

*Reducing P2PSIP Session Setup Delays*

Jouni MÃ¤nenpÃ¤Ã¤ (Ericsson, Finland)

*SESAME: Smartphone Enabled Secure Access to Multiple Entities*

Ameya M Sanzgiri (University at Buffalo, USA); Anandathirtha Nandugudi (University at Buffalo, USA); Shambhu Upadhyaya (University at Buffalo, USA); Chunming Qiao (State University of New York at Buffalo, USA)

**WN II: Wireless Networks II**

Room: Mariner Point

Chair: Nei Kato (Tohoku University, Japan)

*An Efficient Algorithm to Optimize Interference and System Capacity for Cognitive Wireless Networks*

Manish Wadhwa (South University - Virginia Beach, USA); Min Song (The University of Toledo, USA); ChunSheng Xin (Norfolk State University, USA); Komalpreet Kaur (Old Dominion University, USA)

*Fairness Issue in Message Delivery in Delay- and Disruption-Tolerant Networks for Disaster Areas*

Asato Takahashi (Tohoku University, Japan); Hiroki Nishiyama (Tohoku University, Japan); Nei Kato (Tohoku University, Japan)  
*Architecture and Protocols for LTE-based Device to Device Communication*  
Balaji Raghothaman (InterDigital, USA); Eric Deng (InterDigital, USA); Ravikumar Pragada (InterDigital, USA); Gregory Sternberg (InterDigital Communications Corp., USA); Tao Deng (Interdigital, USA); Kiran Vanganuru (Intel, USA)  
*A MAC Protocol for Wireless Personal Area Networks*  
Gang Ding (Qualcomm, USA); Richard Farley (Qualcomm, Inc., USA)  
*Mechanisms for Coexistence of Collocated WLAN and Bluetooth in the Same Device*  
Ariton Xhafa (Texas Instruments Inc., USA); Yanjun Sun (Texas Instruments, USA)  
*A Stackelberg Game for Cooperative Cognitive Radio Network with Active SUs*  
Heejun Roh (Korea University, Korea); Cheoulhoon Jung (Korea University, Korea); Wonjun Lee (Korea University, Korea); Ding-Zhu Du (University of Texas, Dallas, USA)

## **Thursday, January 31**

**08:30 - 09:30**

**Keynote Talk: Analytical and Experimental Methods for High-Performance Network Testing**

Speaker: Nageswara S. V. Rao, Corporate Fellow, Oak Ridge National Laboratory

Room: Mission I

Chair: Hung Nguyen (The Aerospace Corporation, USA)

**10:00 - 12:00**

**Qualcomm Distinguished Lecture VI: Characterizing and Leveraging People Movement in Mobile Networks**

Speaker: Klara Nahrstedt, Professor, University of Illinois, Urbana-Champaign, USA

Room: Mission I

Chair: Dilip Krishnaswamy (Qualcomm Research Center, USA)

**CQSM: Communication QoS and System Modeling**

Room: Mariner Point

Chairs: Augusto Jose Venancio Neto, Ph. D. (Universidade Federal do Rio Grande do Norte & Centro de CiÃncias Exatas da Terra, Brazil), Robert WÃ³jcik (AGH University of Science and Technology, Poland)

*Caching for IPTV distribution with time-shift*

Henrik Abrahamsson (SICS, Sweden); Mats BjÃ¶rkman (Malardalen University, Sweden)

*Enhanced Measurement-Based Admission Control for Flow-Aware Networks*

Robert WÃ³jcik (AGH University of Science and Technology, Poland); Jerzy DomaÅ, (AGH University of Science and Technology, Poland); Andrzej Jajszczyk (AGH University of Science and Technology, Poland)

*Monitoring VoIP Call Quality Using Improved Simplified E-model*

Haytham Assem (NUI Maynooth, Ireland); David Malone (NUI Maynooth, Ireland); Jonathan Dunne (Systems and Performance Engineering, IBM Dublin, Software Lab, Ireland); Pat Oâ€™Sullivan (Systems and Performance Engineering, IBM Dublin, Software Lab, Ireland)

*Assessment of speech quality degradation indicators for "continuity" dimension in super wideband telephony context*

Sibiri Tiemounou (Rennes 1 University & France Telecom, France); RÃ©gine Le Bouquin JeannÃ©s (University of Rennes 1, France); Vincent Barriac (France TÃ©lÃ©com, France)

*Practical Multipath Load Balancing with QoS*

Brad Smith (University of California, Santa Cruz, USA); Lincoln Thurlow (University of California Santa Cruz, USA)

*A Deterministic Loss Model Based Analysis of CUBIC*

Rodolfo Ignacio Ledesma Goyzueta (State University of New York - Binghamton, USA); Yu Chen (State University of New York - Binghamton, USA)

## **DTSA: Data Storage Technology and Applications**

Room: Crown Point

Chairs: Ravi Hiranand Motwani (Intel Corporation, USA), Vasilis Sourlas (University of Thessaly & CERTH-ITI, Greece)

*Design of LDPC Coding Schemes for Exploitation of Bit Error Rate Diversity across Dies in NAND Flash Memory*

Ravi Hiranand Motwani (Intel Corporation, USA); Chong Ong (Intel Corporation, USA)

*Effective Cache Management and Performance Limits in Information-Centric Networks*

- Vasilis Sourlas (University of Thessaly & CERTH-ITI, Greece);  
 Leandros Tassioulas (University of Thessaly, Greece)
- Modulation Coding for Flash Memories*  
 Yongjune Kim (Carnegie Mellon University, USA); Kyoung Lae Cho  
 (Samsung Electronics, Korea); Hongrak Son (Samsung Electronics,  
 Korea); Jaehong Kim (Samsung Electronics, Korea); Jun Jin Kong  
 (Samsung Electronics Co., Ltd., Korea); Jaejin Lee (Soongsil University,  
 Korea); B. V. K. Vijaya Kumar (Carnegie Mellon University, USA)
- Storage and Network Resource Usage in Reactive and Proactive Replicated  
 Storage Systems*  
 Rossana Motta (University of California, San Diego, USA); Joseph  
 Pasquale (University of California, San Diego, USA)
- LCS-MANET: A Mobile Storage Architecture with Location Centric Storage  
 Algorithm in MANETs*  
 Shuai Zhao (Peking University, P.R. China); Le Chang (Peking  
 University, P.R. China); Tong Zhao (Peking University, P.R. China);  
 Wei Yan (Peking University, P.R. China)
- Simple, Exact Placement of Data in Containers*  
 Thomas J.E. Schwarz (Universidad Catolica del Uruguay, Uruguay);  
 Ignacio Corderi (UCSC, USA); Darrell Long (University of California at  
 Santa Cruz, USA); Jehan-Francois PÃ©tris (University of Houston, USA)

### **WC III: Wireless Communications III**

Room: Mission III

Chair: Kunjie Xu (University of Pittsburgh, USA)

*Performance Analysis of Hierarchical Selection Diversity Combining in  
 Rayleigh Fading*

Sebastien Roy (University of Sherbrooke, Canada)

*Turbo equalization of Precoded Collaborative MIMO for the Uplink of LTE-  
 advanced*

Karim A. Banawan (Alexandria University, Egypt); Essam Sourour  
 (Alexandria University, Egypt)

*QoS-Aware Discrete Bit Loading for OFDMA Networks*

Alireza Sani (University of Tehran, Iran); Aliazam Abbasfar (University  
 of Tehran, Iran)

*A Queueing Theoretic Model For Opportunistic Network Coding*

J T Charith Gunasekara (University of Manitoba, Canada); Attahiru S.  
 Alfa (University of Manitoba, Canada); Pradeepa Yahampath  
 (University of Manitoba, Canada)

*Performance of Cooperative Relaying with Adaptive Modulation and Selection  
 Combining*

Wei Song (University of New Brunswick, Canada); Peijian Ju (University of New Brunswick, Canada); Dizhi Zhou (University of New Brunswick, Canada)

*Energy Balanced Chain in IEEE 802.15.4 Low Rate WPAN*

Kunjie Xu (University of Pittsburgh, USA); Mu Zhou (Chongqing University of Posts and Telecommunications & Chongqing Municipal Key Laboratory of Mobile Communications, P.R. China)

**13:30 - 14:30**

**Plenary Talk: Vehicle Cloud Computing**

Speaker: Mario Gerla, Professor, University of California, Los Angeles, USA

Room: Mission I

Chair: Hung Nguyen (The Aerospace Corporation, USA)

**13:30 - 15:30**

**Invited Papers III**

Room: Mission III

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

*Survivable Cloud Networking Services*

Feng Gu (University of New Mexico, USA); Hamed Alazemi (Kuwait University, Kuwait); Ammar Rayes (Cisco / San Jose State University, USA); Nasir Ghani (University of New Mexico, USA)

*System Resilience Modeling and Enhancement for the Cloud*

Manghui Tu (Purdue University Calumet, USA); Dianxiang Xu (Dakota State University, USA)

*Cross-Layer Detection of Stealthy Jammers in Multihop Cognitive Radio Networks*

Lijun Qian (Prairie View A&M University, USA); Xiangfang Li (Texas A&M University, USA); Shuangqing Wei (Louisiana State University, USA)

**NAPE: Network Algorithm & Performance Evaluation**

Room: Mariner Point

Chairs: Fulvio Rizzo (Politecnico di Torino, Italy), Jiangtao Wen (Tsinghua University, P.R. China)

*Packet-Pair Sizing for Controlling Packet Dispersion on Wired Heterogeneous Networks*

Khondaker M. Salehin (New Jersey Institute of Technology, USA);  
Roberto Rojas-Cessa (New Jersey Institute of Technology, USA)  
*Stability metrics and criteria for path-vector routing*  
Dimitri Papadimitriou (Alcatel-Lucent Bell & UGent, Belgium); Albert  
Cabellos-Aparicio (Universitat Politècnica de Catalunya, Spain); Florin  
Coras (Universitat Politècnica de Catalunya (UPC), Spain)  
*Uncovering the evolution from finite to infinite high-priority capacity in a  
priority queue*  
Joris Walraevens (Ghent University - UGent, Belgium); Thomas  
Demoor (Ghent University, Belgium); Dieter Fiems (Ghent University,  
Belgium); Herwig Bruneel (Ghent University & Department of  
Telecommunications and Information Processing, Belgium)  
*TCP-FITDC: An Adaptive Approach to TCP Incast Avoidance for Data Center  
Applications*  
Jun Zhang (Tsinghua University, P.R. China); Jiangtao Wen (Tsinghua  
University, P.R. China); Jingyuan Wang (Beihang University, P.R.  
China); Wenlai Zhao (Tsinghua University, P.R. China)  
*Analysis of Adaptive Queueing Policies via Adiabatic Approach*  
Leena Zacharias (Broadcom Corporation, USA); Thinh Nguyen (Oregon  
State, USA); Yevgeniy Kovchegov (Oregon State University, USA);  
Kyle Bradford (Oregon State University, USA)  
*Filtering Network Traffic Based on Protocol Encapsulation Rules*  
Ivano Cerrato (Politecnico di Torino, Italy); Marco Leogrande  
(Politecnico di Torino, Italy); Fulvio Rizzo (Politecnico di Torino, Italy)

#### **WNA: Wireless Networks Applications**

Room: Crown Point

Chairs: Anjali Agarwal (Concordia University, Canada), Kunjie Xu (University  
of Pittsburgh, USA)

*A Quality of Experience Handover System for Heterogeneous Multimedia  
Wireless Networks*

Eduardo Cerqueira (Federal University of Para & UFPA, Brazil); Carlos  
Quadros (Federal University of Para, Brazil); Augusto Jose Venancio  
Neto, Ph. D. (Universidade Federal do Rio Grande do Norte & Centro de  
Ciências Exatas da Terra, Brazil); André Riker (University of  
Coimbra, Portugal); Roger Immich (University of Coimbra, Portugal);  
Marília Curado (University of Coimbra, Portugal); Antonio Pescapè  
(University of Napoli Federico II, Italy)

*A Novel Optical Wireless MIMO Architecture and Its Application*

Mingbo Niu (University of British Columbia, Canada); Julian Cheng (University of British Columbia, Canada); Jonathan F Holzman (University of British Columbia (UBC) Okanagan, Canada)  
*Multi-Objective QoS Routing for Wireless Sensor Networks*  
Hind Alwan (University, Canada); Anjali Agarwal (Concordia University, Canada)  
*Multiple Packet Reception in Asynchronous Wireless Networks*  
Antonios Argyriou (University of Thessaly & CERTH, Greece)  
*On Optimal Input Design and Model Selection for Communication Channels*  
Yanyan Li (University of Tennessee, USA); Seddik M. Djouadi (University of Tennessee, USA); Mohammed M. Olama (Oak Ridge National Laboratory, USA)  
*An Efficient Hybrid Model and Dynamic Performance Analysis for Multihop Wireless Networks*  
Kunjie Xu (University of Pittsburgh, USA); David Tipper (University of Pittsburgh, USA); Prashant Krishnamurthy (University of Pittsburgh, USA); Yi Qian (University of Nebraskaâ€“Lincoln, USA)

**14:30 - 15:30**

**Plenary Talk: Research and Challenges of Multimedia Data Management and Computing**

Shu-Ching Chen, Professor, Florida International University, USA  
Room: Mission I  
Chair: Hung Nguyen (The Aerospace Corporation, USA)

**16:00 - 18:00**

**Invited Position Talks III**

Room: Mission I  
Chair: Irfan Awan (University of Bradford, United Kingdom)  
*Elastic Optical Networking and Low-Latency High-Radix Optical Switches for Future Cloud Computing*  
S. J. Ben Yoo (University of California, Davis, USA); Yawei Yin (University of California, Davis, USA); Roberto Proietti (University of California, Davis, USA)  
*Inter-domain QoT-aware RWA for Translucent Optical Networks*  
Juzi Zhao (The George Washington University, USA); Suresh Subramaniam (The George Washington University, USA); Maite Brandt-Pearce (University of Virginia, USA)

*Spatio-temporal Analysis for Smart Grids with Wind Generation Integration*

Miao He (Arizona State University, USA); Lei Yang (Arizona State University, USA); Junshan Zhang (Arizona State University, USA); Vijay Vittal (Ira A. Fulton Chair, USA)

*Towards An Enterprise Self-healing System against Botnets Attacks*

Adeeb Alhomoud (University of Bradford, United Kingdom); Irfan Awan (University of Bradford, United Kingdom); Jules Ferdinand Pagna Disso, de Muila (EADS Innovations Works, United Kingdom)

**Invited Papers IV**

Room: Mission III

Chairs: Raheleh B Dilmaghani (IBM T. J. Watson Research Lab & University of California, San Diego, USA), Mario Gerla (University of California at Los Angeles, USA)

*Interest Propagation In Named Data MANETs*

Yu-Ting Yu (University of California, Los Angeles, USA); Raheleh B Dilmaghani (IBM T. J. Watson Research Lab & University of California, San Diego, USA); Seraphin B Calo (IBM Research, USA); M. Y. Sanadidi (University of California, Los Angeles, USA); Mario Gerla (University of California at Los Angeles, USA)

*Pics-On-Wheels: Photo Surveillance in the Vehicular Cloud*

Mario Gerla (University of California at Los Angeles, USA); Jui-Ting Weng (University of California, Los Angeles, USA); Giovanni Pau (UCLA, USA)

*Human-centered Wireless Body Computing: The Multifold Opportunities and Challenges*

Urbashi Mitra (University of Southern California, USA); Shrikanth Narayanan (University of Southern California, USA)

**NRQS: Network Routing, QoS and Security**

Room: Crown Point

Chairs: Eduardo Cerqueira (Federal University of Para & UFPA, Brazil), Joy Zhang (Carnegie Mellon University, USA)

*SenSec: Mobile Security Through Passive Sensing*

Jiang Zhu (Carnegie Mellon University, USA); Pang Wu (Carnegie Mellon University, USA); Xiao Wang (Carnegie Mellon University, USA); Joy Zhang (Carnegie Mellon University, USA)

*Enhancing Dependability in Future Internet Systems by Applying Over-Provisioning Centric Resource Allocation Control*



Sandino Jardim (Federal University of Goias, Brazil); Augusto Jose Venancio Neto, Ph. D. (Universidade Federal do Rio Grande do Norte & Centro de CiÃncias Exatas da Terra, Brazil); JosÃ© Castillo Lema (Universidade da CoruÃ±a, Spain); Eduardo Cerqueira (Federal University of Para & UFPA, Brazil); Hugo Barros (Federal University of Rio Grande do Norte, Brazil)

*Multiple Object Tracking in Sensor Networks using Distributed Clique Finding*  
Nauman Javed (University of Massachusetts, USA); Tilman Wolf (University of Massachusetts, USA)

*Improving Fairness of OBS Routing Protocols in Multimode Fiber Networks*  
Sana Tariq (University of Central Florida, USA); Mostafa Bassiouni (University of Central Florida, USA); Guifang Li (University of Central Florida, USA)

*ROUTE-O-MATIC: A Comprehensive Framework for Reactive Mesh Routing Protocols*

Mohamad Sbeiti (Dortmund University of Technology, Germany); Carsten Vogel (Dortmund University of Technology, Germany); Andreas Wolff (TU Dortmund University, Germany); Christian Wietfeld (TU Dortmund University & Communication Networks Institute, Germany)

*Interplay Between TVWS and DSRC: Optimal Strategy for QoS of Safety Message Dissemination in VANET*

Jae-Han Lim (University of California, Los Angeles, USA)

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

Room: Mariner Point

Chair: Ravi Prakash (University of Texas at Dallas, USA)

*Coordinated Partial Co-Channel Deployment in Two-Layer Networks*

Nancy Daa El-Din (Alexandria, Egypt); Essam Sourour (Alexandria University, Egypt); Karim G Seddik (American University in Cairo & Alexandria University, Egypt); Ibrahim Ghaleb (Alexandria University, Egypt)

*Rate Adaptation based on Inherent Frame Delivery Ratio for Wireless Networks*

ChaoYi Bian (Peking University, P.R. China); Shanbo Lu (Peking University, P.R. China); Tong Zhao (Peking University, P.R. China); XiaoMing Li (Peking University, P.R. China); Wei Yan (Peking University, P.R. China)

*Throughput Enabled Rate Adaptation in Wireless Networks*

Duy D Nguyen (University of California, Santa Cruz, USA); Jj Garcia-Luna-Aceves (University of California at Santa Cruz, USA); Cedric Westphal (Huawei Innovation Center, USA)

*Optimal Density and Power Allocation of D2D Communication Under Heterogeneous Networks on Multi-Bands with Outage Constraints*

Ziyang Liu (Beijing University of Post and Telecommunication, P.R. China); Hao Chen (Beijing University of Posts and Telecommunications, P.R. China); Tao Peng (Beijing University of Posts & Telecommunications, P.R. China); Wenbo Wang (Beijing University of Posts and Telecommunications, P.R. China)

*Rate Selection Analysis under Semi-Persistent Scheduling in LTE Networks*

Donald Parruca (RWTH Aachen University, Germany); James Gross (Royal Institute of Technology (KTH), Sweden)