35th IEEE Sarnoff Symposium 2012 Program

Monday, May 21

OPENING AND WELCOME MESSAGE (8:30am – 8:49am at BALLROOM A)
   Joel S. Bloom, Ph.D. (President, NJIT)

KEYNOTE1 (8:50am – 9:49am at BALLROOM A)
   Cyber Security Defense: Challenges & State of the Art
   Parag Pruthi, Ph.D. (Founder, Chairman, and CEO, Niksun)

INVITED1: Future Internet I (10:05am – 12:09pm at ROOM 215)
   Session Chair: Shweta Jain (York College, CUNY, USA)
   Measuring and Quantifying the Silent Majority on the Internet
   Mukundan Venkataraman (Stevens Institute of Technology, USA); Koduvayur Subbalakshmi (Stevens Institute Of Technology, USA); Rajarathnam Chandramouli (Stevens Institute of Technology, USA)
   Content Delivery in the MobilityFirst Future Internet Architecture
   Feixiong Zhang (Rutgers University & WINLAB, USA); Kiran Nagaraja (Rutgers University, USA); Yanyong Zhang (Rutgers University, USA); Dipankar Raychaudhuri (Rutgers University, USA)
   Securing the Mobile Enterprise with Network-Based Security and Cloud Computing
   Gustavo de los Reyes (AT&T Security Research Center, USA); Sanjay Macwan (AT&T, USA); Deepak Chawla (AT&T Security Research Center, USA); Cristina Serban (AT&T Security Research Center, USA)
   Catching the Wily Hacker: A Multilayer Deception System
   Wei Wang (AT&T Security Research Center, USA); Jeffrey Bickford (AT&T, USA); Ilona Murynets (AT&T Security Research Center, USA); Ramesh Subbaraman (AT&T, USA); Andrea G. Forte (AT&T, USA); Gokul Singaraju (AT&T, USA)

S1: WIRELESS NETWORKS I (10:05am – 12:09pm at ROOM 220)
   Session Chair: Elias Kpodzo (L-3 Communications TE, USA)
   Performance Evaluation of Flexible TDD Switching in 3GPP LTE System
   Yufeng Wang (University of South Florida, USA); Kimmo Valkealahti (Nokia Research Center, Finland); Ravi Sankar (University of South Florida, USA); Salvatore Morgera (Florida Atlantic University, USA)
The Impact of Transmission Errors in MAC Schemes for Distributed Wireless Networks

António Furtado (Universidade Nova de Lisboa / UNINOVA, Portugal); Rodolfo Oliveira (Universidade Nova de Lisboa/Uninova, Portugal); Miguel Luís (Universidade Nova de Lisboa, Portugal); Rui Dinis (Instituto de Telecomunicações/UNINOVA/FCT-UNL, Portugal); Luis Bernardo (Universidade Nova de Lisboa, Portugal); Paulo Montezuma (FCT-UNL, Portugal)

Estimation of Spectrum Occupancy in Heterogeneous Radio Access Environments using Random Spectral Sampling

Sean Rocke (Worcester Polytechnic Institute, USA); Alexander M. Wyglinski (Worcester Polytechnic Institute, USA)

S2: WIRELESS COMMUNICATIONS I (10:05am – 12:09pm at ROOM 225)

Session Chair: Silvija Kokalj-Filipović (Bell Labs, Alcatel-Lucent, USA)

Capacity of Communications Channels with 1-Bit Quantization and Oversampling at the Receiver

Stefan Krone (TU Dresden, Germany); Gerhard Fettweis (Technische Universität Dresden, Germany)

A Low Complexity Scheme for Joint Channel Estimation and PAPR Reduction Technique

Youssef Nasser (American University of Beirut, Lebanon); Ralph Mounzer (INSA-Rennes, France); Jean-François Hélard (IETR, France)

Performance of Discrete Wavelet Transform-Based Deconvolution Applied to Multipath Channel Estimation

Canute Vaz (Robertson Technologies, USA); David G. Daut (Rutgers University, USA)

Feedback Information and Energy Efficiency of MIMO Transmission Modes in LTE

Olayinka Adigun (Kingston University, United Kingdom); Christos Politis (Kingston University, United Kingdom)

T1: TUTORIAL (10:05am – 12:09pm at ROOM 230)

Tutorial Chair: Aleksandar Kolarov (Telcordia, USA)

LTE and LTE Advanced Rollout – Opportunities & Challenges

Deepak Kataria, (IP Junction Inc., USA)

S3: NETWORKING I (1:40pm – 3:20pm at ROOM 215)

Session Chair: Andrea Francini (Bell Labs, Alcatel-Lucent, USA)

A Framework for Evaluating Network Optimization Techniques

Ossama Younis (Applied Communication Sciences, USA); Andrei Ghetie (Telcordia, USA); Sharanya Eswaran (Telcordia Technologies, USA); Noam Goldberg (Technion, Israel); Sunil Samtani (Telcordia Technologies Inc., USA); Maneesh Varshney (Scalable Network Technologies, Inc., USA); Mitesh Patel (US Army CERDEC STCD, USA)

Impact of Network Structure on Latency in Complex Networks

Ziping Hu (The University of Oklahoma, USA); Pramode K. Verma (The University of Oklahoma, USA)

Ask, Don't Search: A Social Help Engine for Online Social Network Mobile Users

Tam Vu (Rutgers University, USA); Akash Baid (WINLAB, Rutgers University, USA)
T2: TUTORIAL (1:40pm – 3:20pm at ROOM 220)
Tutorial Chair: Aleksandar Kolarov (Telcordia, USA)

*Introduction to TV White Space Radio*
Anthony Triolo (Applied Communication Sciences, USA)

S4: WIRELESS COMMUNICATIONS II (1:40pm – 3:20pm at ROOM 230)
Session Chair: Walid Ahmed (Broadcom Inc., USA)

*Location Aided Carrier Frequency Offset Estimation for Uplink OFDMA Systems*
Youssef Nasser (American University of Beirut, Lebanon); Hassan Merhe (American University of Beirut, Lebanon); Maryline Hélard (INSA Rennes & IETR Institute of Electronics and Telecommunications of Rennes, France)

*Digital Pre-distortion of Power Amplifier Impairments in Spectrally Agile Transmissions*
Zhu Fu (Worcester Polytechnic Institute, USA); Lauri Anttila (Tampere University of Technology, Finland); Mikko Valkama (Tampere University of Technology, Finland); Alexander M. Wyglinski (Worcester Polytechnic Institute, USA)

P1: INDUSTRY PANEL (1:40pm – 3:20pm at ROOM 235)
Panel Chair: Eric Addeo (DeVry University, USA)

*Telemedicine*
Deborah Helman (DeVry University, USA); Dewi S. Sudjono-Santoso (University of Medicine and Dentistry of New Jersey, USA); N. Iwan Santoso (DeVry University, USA)

S5: NETWORKING II (3:45pm – 5:25pm at ROOM 215)
Session Chair: Ashutosh Dutta (NIKSUN, USA)

*Detecting Covert Channels Within VoIP*
Hong (Hannah) Zhao (Fairleigh Dickinson University, USA); Nirwan Ansari (NJIT, USA)

*MCS: Buffered Clos-Network Switch with In-Sequence Packet Forwarding*
Ziqian Dong (New York Institute of Technology, USA); Roberto Rojas-Cessa (New Jersey Institute of Technology, USA)

*Flexible and Robust Video Delivery Based on Self-Contained Multimedia Segments*
Raziel Haimi-Cohen (Alcatel-Lucent, Bell-Laboratories, USA); John Hearn (Alcatel-Lucent, Bell-Laboratories, USA); Michael Scheutzow (Alcatel-Lucent, Bell-Laboratories, USA); Eric Levy (Alcatel-Lucent, Bell-Laboratories, USA); Les Wu (Alcatel-Lucent, Bell-Laboratories, USA); Paul Wilford (Bell Labs, USA); Dorel Livescu (Alcatel-Lucent, Bell-Laboratories, USA)

*Location-constrained Survivable Network Virtualization*
Qian Hu (Georgia State University, USA); Yang Wang (Georgia State University, USA); Xiaojun Cao (Georgia State University, USA)
S6: WIRELESS AD HOC AND SENSOR NETWORKS I (3:45pm – 5:25pm at ROOM 220)
Session Chair: Osvaldo Simeone (New Jersey Institute of Technology, USA)

*Instantaneous Rate Based Cooperative MAC Protocol for Wireless Ad hoc Networks*
   Murad Khalid (USF, USA); Yufeng Wang (University of South Florida, USA); Inho Ra (Kunsan National University, Korea); Ravi Sankar (University of South Florida, USA)

*A QoS Based Cooperative Spectrum Utilization in Cognitive Radio Networks*
   G. Selda Uyanik (Istanbul Technical University, Turkey); Sema Oktug (Istanbul Technical University, Turkey)

*Parallel Multi-channel Detection: A Practical Solution to Energy Detection of Heterogeneous Wideband Spectrum*
   Oluwatobi O Olabiyi (Prairie View A&M University, USA); Annamalai Annamalai (Prairie View A&M University, USA)

S7: WIRELESS MIMO SYSTEMS (3:45pm – 5:25pm at ROOM 225)
Session Chair: Frank O’Brien (IEEE/CSI, USA)

*A Simple Slicer For Soft Detection In Gray-Coded QAM-Modulated MIMO OFDM Systems*
   Chun Kin Au Yeung (Samsung US R&D Center, USA); Jungwon Lee (Samsung US R&D Center, USA); Sungsoo Kim (Samsung Electronics Co., Ltd, Korea)

*On the Pareto Optimum of Long-Term Max-Min Beamforming with General Power Constraints*
   Guido Dartmann (RWTH Aachen University, Germany); Xitao Gong (RWTH Aachen University, Germany); Gerd H. Ascheid (RWTH Aachen University, Germany)

*Outage Performance of MIMO Two-Way AF Relaying with End-to-End Antenna Selection*
   Prabhat Kumar Upadhyay (Birla Institute of Technology, Mesra, India); Shankar Prakriya (Indian Institute of Technology, Delhi, India)

*Rate Adaptation for Interference Cancelation Receivers in Slowly Time-Variant MIMO Channels*
   Eckhard Ohlmer (Technische Universität Dresden, Germany); Gerhard Fettweis (Technische Universität Dresden, Germany)

T3: Tutorial (3:45pm – 5:25pm at ROOM 230)
Tutorial Chair: Aleksandar Kolarov (Telcordia, USA)

*Theory and Applications of Complex Evolving Networks (TACENet)*
   Symeon Papavassiliou (National Technical University of Athens, Greece)

KEYNOTE2 (7:15pm – 8:14pm at BALLROOM A)

*Interference Cancellation Systems (ICS) in a Saturated Electromagnetic Spectrum in Tactical Applications*
   Robert G. Holland, Ph.D. (Vice President of Engineering, L-3 Communications, Telemetry East)
Tuesday, May 22

INVITED2: Future Internet II (8:30am – 10:29am at ROOM 215)
Session Chair: Ziqian Dong (New York Institute of Technology, USA)

Active Queue Management With Variable Bottleneck Rate
Andrea Francini (Bell Labs, Alcatel-Lucent, USA)

An MDP Framework for Centralized Dynamic Spectrum Auction
Juan Jose Alcaraz (Universidad Politécnica de Cartagena, Spain); Mario López-Martínez (Technical University of Cartagena, Spain); Javier Vales-Alonso (Universidad Politécnica de Cartagena, Spain); Joan Garcia-Haro (Technical University of Cartagena, Spain)

Roadside Infrastructure Planning for Vehicle Trajectory Collection
Tan Yan (New Jersey Institute of Technology, USA); Guiling Wang (New Jersey Institute of Technology, USA)

Wireless Access Considerations for the MobilityFirst Future Internet Architecture
Akash Baid (WINLAB, Rutgers University, USA); Dipankar Raychaudhuri (Rutgers University, USA)

Energy Harvesting Two-hop Networks: Optimal Policies for the Multi-Energy Arrival Case
Oner Orhan (Polytechnic Institute of NYU, USA); Elza Erkip (Polytechnic Institute of NYU, USA)

S8: NETWORKING III (8:30am – 10:29am at ROOM 220)
Session Chair: Symeon Papavassiliou (Institute of Comm. and Comp. Systems/National Technical University of Athens, Greece)

HyScaleII: A High Performance Hybrid Optical Network Architecture for Data Centers
Shivashis Saha (University of Nebraska-Lincoln, USA); Jitender Singh Deogun (University of Nebraska-Lincoln, USA); Lisong Xu (University of Nebraska-Lincoln, USA)

Evaluation of Switching Performance of a Virtual Software Router
Roberto Rojas-Cessa (New Jersey Institute of Technology, USA); Khondaker M. Salehin (New Jersey Institute of Technology, USA); Komlan Egoh (New Jersey Institute of Technology, USA)

Measuring Video Quality Degradation Using Face Detection
Bengi Karacali (Avaya Labs, USA); Anjur S Krishnakumar (Avaya Labs, USA)

NEXT Utility Ethernet Network Architecture
Tom R Janca (Utility Ethernet Forum & Saguaro Utility Networks, USA)

S9: WIRELESS NETWORKS II (8:30am – 10:29am at ROOM 225)
Session Chair: Elias Kpodzo (L-3 Communications TE, USA)

Low power consumption Intelligent Local Avoided Collision (iLAC) MAC protocol for WLAN
Hieu C Dinh (Waseda University, Japan); Tuan Le (Authority of Radio Frequency Management, Vietnam); Thanh Hieu Nguyen (Vietnam National University, Vietnam); Shigeru Shimamoto (Waseda University & Graduate School of Global Information and Telecommunication Studies, Japan); Akeo Masuda (NTT, Japan); Verotiana Rabarijaona (Waseda University, Japan)
MoCCA: A Mobile Cellular Cloud Architecture
Amitabh Mishra (Johns Hopkins University, USA)

Performance Comparison of Dual-Cell HSDPA and Long Term Evolution in Macro Cellular Network
Muhammad Usman Sheikh (Tampere University of Technology, Finland); Jukka Lempiäinen (Tampere University of Technology, Finland)

Energy-Conscious Prototype for Enabling Multi-Protocol Wireless Communications
Travis Collins (Worcester Polytechnic Institute, USA); Patrick Desantis (Worcester Polytechnic Institute, USA); David Vecchiarelli (Worcester Polytechnic Institute, USA); Alexander M. Wyglinski (Worcester Polytechnic Institute, USA); Sean McGrath (University of Limerick, Ireland)

S10: WIRELESS COMMUNICATIONS III (8:30am – 10:29am at ROOM 230)
Session Chair: Osvaldo Simeone (New Jersey Institute of Technology, USA)

Combining LT codes and XOR network coding for reliable and energy efficient transmissions in wireless sensor networks
Anya Apavatjrut (Chiang Mai University, Thailand); Katia Jaffrès-Runser (University of Toulouse, France); Claire Goursaud (INSA-Lyon, France); Jean-Marie Gorce (INSA-Lyon, France)

Low Complexity Fair Queueing Driven Wireless Multi-user Scheduler
Wei Pu (State University of New York at Buffalo, USA); Chang Wen Chen (State University of New York at Buffalo, USA)

Dynamic Frequency Allocation Scheme for a Standalone Wireless Access Point
Osama Abu-Sharkh (Princess Sumaya University For Technology, Jordan); Raad Qandah (Princess Sumaya University For Technology, Jordan); Mohammad Baba (Princess Sumaya University For Technology, Jordan); Mohammad Sabah (Princess Sumaya University For Technology, Jordan)

T4: TUTORIAL (8:30am – 10:29am at ROOM 235)
Tutorial Chair: Aleksandar Kolarov (Telcordia, USA)

Machine-to-machine Communications and Internet of Things: What is behind the industry momentum? An in depth view of applications, architecture, and standards
Harish Viswanathan (Alcatel-Lucent, Bell Labs, USA)

S11: WIRELESS AD HOC AND SENSOR NETWORKS II (10:45am – 12:54pm at ROOM 215)
Session Chair: Walid Ahmed (Broadcom Inc., USA)

Metrics for performance evaluation of self-positioning autonomous MANET nodes
Janusz Kusyk (The Graduate Center, The City University of New York, USA); Jianmin Zou (The City College of the City University of New York, USA); Stephen Gundry (The City College of the City University of New York, USA); Cem Safak Sahin (BAE Systems, USA); M. Umit Uyar (City College of The City University of New York, USA)

A Cluster-based Hybrid Access Protocol for Wireless Sensor Networks
Min Zhang (Auburn University, USA); Alireza Babaei (Auburn University, USA); Prathima Agrawal (Auburn University, USA)
Markov Chain Model for Differential Evolution Based Topology Control in MANETs

Stephen Gundry (The City College of the City University of New York, USA); Jianmin Zou (The City College of the City University of New York, USA); Janusz Kusyk (The Graduate Center, The City University of New York, USA); Cem Safak Sahin (BAE Systems, USA); M. Umit Uyar (City College of The City University of New York, USA)

A Cross-Layer MACPHY Framework for PER Guarantee in Multiuser Detection Based Ad Hoc Networks

P. Justin Kouraogo (Ecole de Technologie Supérieure University of Québec at Montréal, Canada); Zbigniew Dziong (École de technologie supérieure, University of Quebec, Canada); Mohamad Haidar (Ecole de Technologie Superieure, Canada); Francois Gagnon (Ecole de Technologie Superieure, Canada)

S12: COMMUNICATION AND NETWORK SECURITY (10:45am – 12:54pm at ROOM 220)

Session Chair: Frank O'Brien (IEEE/CSI, USA)

Introducing Soft Verification as an Improvement of Hard Verification of Cryptographic Check Values

Natasa Zivic (University of Siegen, Germany)

Identity Based Partial Aggregate Signature Scheme Without Pairing

Sree Vivek (Indian Institute of Technology Madras, India); Sharmila Deva Selvi (IIT Madras, India); Shriram J (National Institute of Technology, Trichy, India); Pandu Rangan C (IIT Madras, India)

Attack Detection in Water Supply Systems using Kalman Filter Estimator

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

Secure & Trusted Communication in Emergency Situations

Antonis Michalas (Aalborg University Center for TeleInFrastructure (CTIF), Denmark); Menelaos Bakopoulos (Athens Information Technology, Greece); Nikos Komninos (University of Pireaus, Greece); Neeli Rashmi Prasad (Center for TeleInFrastructure (CTIF), Denmark)

P2: INDUSTRY PANEL (10:45am – 12:54pm at ROOM 235)

Panel Chair: Alex Habib (Custom Automation, USA)

Industrial communication Networks on the Plant Floor

Josh Davies (Control Associates, Inc, USA); Andres Gomez (Rockwell Automation, USA); Richard W. Pranke (Bristol-Myers Squibb, USA)

T5: TUTORIAL (10:45am – 12:54pm at ROOM 230)

Tutorial Chair: Aleksandar Kolarov (Telcordia, USA)

Design Issues in Time-Driven Wireless Sensor Networks

Sebastia Galmes (University of Balearic Islands, Spain)

STUDENT POSTER SESSION (10:15am – 12:54pm at BALLROOM A)

Session Chair: Ziqian Dong (New York Institute of Technology, USA)
KEYNOTE3 (1:15pm – 2:14pm at BALLROOM A)

Technologies for Smarter Wireless Networks

Kang-Won Lee, Ph.D. (Manager, Wireless Networking Department, IBM T. J. Watson Research Center)
Seraphin Calo, Ph.D. (Manager, Policy Technologies Department, IBM T. J. Watson Research Center)

S13: WIRELESS AD HOC AND SENSOR NETWORKS III (2:30pm – 4:10pm at ROOM 215)

Session Chair: Wieslaw Bury (DeVry University, USA)

Capacity-Interference Investigation in Cognitive Radio Networks with Beacon

Farnaz Shayegh (Concordia University, Canada); M. Reza Soleymani (Concordia University, Canada)

Analysis and New Implementations of Periodogram-based Spectrum Sensing

Oluwatobi O Olabiyi (Prairie View A&M University, USA); Annamalai Annamalai (Prairie View A&M University, USA)

Wide-band Spectrum Sensing Using Neighbor Orthogonal Matching Pursuit

Lei Zhou (Stevens Institute of Technology, USA); Hong Man (Stevens Institute of Technology, USA)

On the Noise Power Estimation in the Presence of the Signal for Energy-Based Sensing

Samson Sequeira (Rutgers University & WINLAB, Rutgers University, USA); Rajas R. Mahajan (Rutgers University, USA); Predrag Spasojević (Rutgers University, USA)

S14: WIRELESS AND CODING (2:30pm – 4:10pm at ROOM 220)

Session Chair: Silvija Kokalj-Filipović (Bell Labs, Alcatel-Lucent, USA)

Particle Swarm Optimization based Topology Control Mechanism for Holonomic Unmanned Vehicles Operating in Three-dimensional Space

Jianmin Zou (The City College of the City University of New York, USA); Stephen Gundry (The City College of the City University of New York, USA); Janusz Kusyk (The Graduate Center, The City University of New York, USA); Cem Safak Sahin (BAE Systems, USA); M. Umit Uyar (City College of the City University of New York, USA)

On Coding Efficiency for Flash Memories

Xudong Ma (University of Waterloo, Canada)

On the Delay Performance of Block Codes for Discrete Memoryless Channels with Feedback

Lübben Ralf (Leibniz University of Hannover, Germany); Markus H Fidler (Leibniz Universität Hannover, Germany)

Performance of Permutation Trellis Codes in Cognitive Radio Networks

Raghd El Bardan (Syracuse University, USA); Engin Masazade (Syracuse University, USA); Onur Ozdemir (Andro Computational Solutions, USA); Pramod Varshney (Syracuse University, USA)
T6: TUTORIAL (2:30pm – 4:10pm at ROOM 225)

Tutorial Chair: Aleksandar Kolarov (Telcordia, USA)

Secure Authentication Service: IBM’s internal solution for delivering secure device admission to the network focusing on Mobile devices

   Drew Wyskida (IBM Research, USA)