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10:00 - 10:30

Coffee break

10:30 - 12:00

1A: Plenary session: Best Paper Candidates

Rooms: Beach, Gulf
Chair: Anura P Jayasumana (Colorado State University, USA)

10:30 ***Facilitating Non-Collocated Coexistence for WiFi and 4G Wireless Networks***
Punit Ashok Rathod (Indian Institute of Technology Bombay, India); Abhay Karandikar (IIT Bombay, India); Anirudha Sahoo (IIT Bombay, India)
pp. 1-9

11:00 ***A Privacy-Preserving Reputation System for Participatory Sensing***
Kuan Lun Huang (University of New South Wales & CSIRO Australia, Australia); Salil Kanhere (The University of New South Wales, Australia); Wen Hu (Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia)
pp. 10-18

11:30 ***Secure Sensor Network SUM Aggregation with Detection of Malicious Nodes***
Sunoh Choi (Purdue University, USA); Gabriel Ghiniță (University of Massachusetts Boston, USA); Elisa Bertino (Purdue University, USA)
pp. 19-27

12:00 - 13:20

Lunch break

13:20 - 15:00

2A: Mobility Modeling and Management in Wireless Networks

Room: Beach
Chair: Ehab S. Elmallah (University of Alberta, Canada)

13:20 ***Interconnecting Disjoint Network Segments Using a Mix of Stationary and Mobile Nodes***
Ahmad Abbas (University of Maryland, Baltimore County, USA); Mohamed Younis (University of Maryland Baltimore County, USA)
pp. 28-35

13:45 ***Modeling Visitor Movement in Theme Parks***
Gürkan Solmaz (University of Central Florida, USA); Mustafa İ Akbaş (University of Central Florida, USA); Damla Turgut (University of Central Florida, USA)
pp. 36-43

14:10 ***Comparison of Anchor Selection Algorithms for Improvement of Position Estimation During the Wi-Fi Localization Process in Disaster Scenario***
Oleksandr Artemenko (Ilmenau University of Technology, Germany); Tobias Simon (TU Ilmenau, Germany); Andreas Mitschele-Thiel (Ilmenau University of Technology, Germany); Dominik Schulz (Ilmenau University of Technology, Germany); Rheza Satria Ta (Swiss German University, Tangerang, Indonesia)
pp. 44-49

14:35 ***TOMP: Opportunistic Traffic Offloading Using Movement Predictions***
Patrick Baier (University of Stuttgart, Germany); Frank Dürr (University of Stuttgart, Germany); Kurt Rothermel (University of Stuttgart, Germany)

pp. 50-58

2B: Network Traffic Measurement and Characterization

Room: Gulf
Chair: Burkhard Stiller (University of Zürich & ETH Zürich, TIK, Switzerland)

13:20 ***Monitoring Traffic Activity Graphs with Low-rank Matrix Approximation***
Yang Liu (Iowa State University, USA); Wenji Chen (Iowa State University, USA); Yong Guan (Iowa State University, USA)
pp. 59-67

13:45 ***Sub-flow Packet Sampling for Scalable ML Classification of Interactive Traffic***
Sebastian Zander (Swinburne University of Technology, Australia); Thuy Thi Thu Nguyen (Swinburne University of Technology, Australia); Grenville Armitage (Swinburne university of Technology, Australia)
pp. 68-75

14:10 ***Decoupling Non-Stationary and Stationary Components in Long Range Network Time Series in the Context of Anomaly Detection***
Cyriac James (Indian Institute of Technology Madras, India); Hema A Murthy (Indian Institute of Technology Madras, India)
pp. 76-84

14:35 ***Rapid and Generalized Identification of Packetized Voice Traffic Flows***
Philip Branch (Swinburne University of Technology, Australia); Jason But (Swinburne University, Australia)
pp. 85-92

2C: Security, Privacy and Anonymity

Room: Palm
Chair: Gary Craig Kessler (Embry-Riddle Aeronautical University & Edith Cowan University, USA)

13:20 ***Multi-Resolution Elliptic Curve Digital Signature***
Panoat Chuchaisri (University of Florida, USA); Richard E. Newman (University of Florida, USA)
pp. 93-101

13:45 ***Applicability of Crypto-based Security Approaches in Tactical Wireless Multi-hop Networks***
Nils Aschenbruck (University of Osnabrück, Germany); Elmar Gerhards-Padilla (Fraunhofer FKIE, Germany); Martin Lambertz (University of Bonn, Germany)
pp. 102-110

14:10 ***3DSVAT: A 3D Stereoscopic Vulnerability Assessment Tool for Network Security***
Troy Nunnally (Georgia Institute of Technology, USA); Selcuk Uluagac (Georgia Institute of Technology & The School of ECE, USA); John A. Copeland (Georgia Institute of Techonology, USA); Raheem Beyah (Georgia Institute of Technology, USA)
pp. 111-118

14:35 ***Efficient Construction of Directed Redundant Steiner Trees***
Yigal Bejerano (Bell-Labs, Alcatel-Lucent, USA); Suman Jana (University of Texas at Austin, USA); Pramod Koppol (Bell Labs, Alcatel-Lucent, USA)
pp. 119-127

Demonstration setup

Room: Bay

Posters with Tea

Rooms: Island 2, Bay
Chair: Damla Turgut (University of Central Florida, USA)

Intrusion Detection in Computer Networks Using Optimum-Path Forest Clustering
Kelton Costa (UNESP, Brazil); Clayton Pereira (UNESP - Univ Estadual Paulista, Brazil); Rodrigo Nakamura (Unesp Univ Estadual Paulista, Brazil); Joao Papa (UNESP - Univ Estadual Paulista, Brazil)
pp. 128-131

A Study of P2P Traffic Localization by Network Delay Insertion
HyunYong Lee (The University of Tokyo, Japan); Akihiro Nakao (University of Tokyo, Japan)
pp. 132-135

Automatic Generation of Extended Dependency Graphs for Network Security
Heiko Günther (Fraunhofer FKIE, Germany); Marko Jahnke (Fraunhofer Inst. for Communication, Information Processing and Ergonomics (FKIE), Germany)
pp. 136-139

Resiliency Taxonomy of Routing Protocols in Wireless Sensor Networks
Ochirkhand Erdene-Ochir (Orange Labs, France); Marine Minier (Insa de Lyon, France); Fabrice Valois (INSA Lyon, France); Apostolos Kountouris (France Telecom, France)
pp. 324-327

Achieving End-to-End Goals of WSN Using Weighted Cognitive Maps
Amr El Mougy (Queen's University, Canada); Mohamed Ibnkahla (Queen's University, Canada)
pp. 328-331

A Novel Dynamic Q-Learning-Based Scheduler Technique for LTE-Advanced Technologies Using Neural Networks
Ioan Sorin Comsa (University of Bedfordshire & University of Applied Sciences of Western Switzerland, Switzerland); Sijing Zhang (University of Bedfordshire, United Kingdom); Mehmet Emin Aydin (University of Bedfordshire, United Kingdom); Pierre Kuonen (University of Applied Sciences of Western Switzerland, Switzerland); Jean-Frederic Wagen (University of Applied Science of Fribourg, Switzerland)
pp. 332-335

On the Performance of Sensor Node Repositioning Under Realistic Terrain Constraints
Izzet F Senturk (Southern Illinois University Carbondale, USA); Kemal Akkaya (Southern Illinois University Carbondale, USA)
pp. 336-339

Novel Assessment Metric and Countermeasures for Traffic Attack Threats in Wireless Sensor Networks
Yousef Ebrahimi (University of Maryland Baltimore County, USA); Mohamed Younis (University of Maryland Baltimore County, USA)
pp. 340-343

An Evaluation of Fairness Among Heterogeneous TCP Variants Over 10Gbps High-speed Networks
Lin Xue (Louisiana State University, USA); Suman Kumar (Troy University, USA); Cheng Cui (Louisiana State University, USA); Seung-Jong Park (Louisiana State University, USA)
pp. 344-347

Efficient Traffic Flow Measurement for ISP Networks
Qinghua Wu (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Zhenyu Li (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Jianhua Yang (Institute of Computing Technology, CAS, P.R. China); Gaogang Xie (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Kavé Salamatian (LISTIC PolyTech, Université de Savoie Chambery Annecy, France)
pp. 348-351

17:00 - 17:00

LCN Tuesday - End of the technical program

18:45 - 19:00

Watch the Sunset at the beach

19:00 - 22:00

Conference Banquet

Chair: Ken Christensen (University of South Florida, USA)

Wednesday, October 24

08:00 - 08:45

Registration

08:45 - 08:50

Opening

Rooms: Beach, Gulf, Palm
Chair: Ehab S. Elmallah (University of Alberta, Canada)

08:50 - 09:00

Welcome: Evan Butterfield, IEEE Computer Society, Director of Products and Services

Rooms: Beach, Gulf
Chair: Ehab S. Elmallah (University of Alberta, Canada)

09:00 - 10:00

Keynote 2: Prof. Mark Crovella, Boston University

A Fine-Grained Distance Metric for Analyzing Internet Topology
Rooms: Beach, Gulf
Chair: Tom Pfeifer (Waterford IT Consulting, Ireland)

Abstract: One of the defining properties of small worlds is the prevalence of short paths connecting node pairs. Unfortunately, as a result the usual notion of distance is not particularly helpful in distinguishing neighborhoods in such graphs. This is the case, for example, when analyzing the interdomain routing system of the Internet.

We describe a motivating problem that requires a finer-grained notion of distance. The problem is quite simple to state: how can any given network operator in the Internet determine which paths pass through its network? Surprisingly, the nature of Internet routing makes this question rather hard to answer.

To address this problem, we define a new distance metric on graph nodes. This metric has useful and interesting properties: it is easy to compute and understand, it can be used to sharply distinguish neighborhoods in networks, and it remains useful even in small-world networks. We show how we use this metric to address our motivating problem, and more generally how it can be used for visualization and dimensionality reduction of complex networks.

10:00 - 10:30

Coffee break

10:30 - 12:10

3A: Delay Tolerant Networks and VANETs

Room: Beach
Chair: Kemal Akkaya (Southern Illinois University Carbondale, USA)

10:30 *Characterization and Modeling in Large-scale Urban DTNs*
Chunhe Xia (Beihang University, P.R. China); Dong Liang (Beihang University, P.R. China); Haiquan Wang (Beihang University, P.R. China); Min Luo (Beihang University, P.R. China); Weifeng Lv (Beijing University of Aeronautics and Astronautics, P.R. China)
pp. 352-359

10:55 *A Geolocation-based Vertical Handover Decision Algorithm for Vehicular Networks*
Johann M Márquez-Barja (DISCA - Universidad Politecnica de Valencia & CTVR Telecommunications Research Center - Trinity College Dublin, Spain); Carlos T. Calafate (Universidad Politécnica de Valencia, Spain); Juan-Carlos Cano (Universidad Politecnica de Valencia, Spain); Pietro Manzoni (Universidad Politécnica de Valencia, Spain)
pp. 360-367

11:20 *LPS and LRF: Efficient Buffer Management Policies for Delay and Disruption Tolerant Networks*
Juliano Fischer Naves (Universidade Federal Fluminense, Brazil); Igor Monteiro Moraes (Universidade Federal Fluminense, Brazil); Celio Albuquerque (Fluminense Federal University, Brazil)
pp. 368-375

11:45 *Mobility Based Dynamic TXOP for Vehicular Communication*
Hikmat El Ajaltouni (University of Ottawa & Paradise Research Laboratory, Canada); Azzedine Boukerche (University of Ottawa, Canada); Richard W. Pazzi (University of Ontario Institute of Technology, Canada)
pp. 376-383

3B: Transport Protocols

Room: Gulf
Chair: Matthias Frank (University of Bonn, Germany)

10:30 *Modeling and Optimizing Transport-Support Workflows in High-performance Networks*
Daqing Yun (The University of Memphis, USA); Qishi Wu (University of Memphis & Oak Ridge National Laboratory, USA); Patrick Brown (Southern Illinois University, USA); Michelle Mengxia Zhu (Southern Illinois University Carbondale, USA)
pp. 384-391

10:55 *Enhancing TCP with Cross-layer Notifications and Capacity Estimation in Heterogeneous Access Networks*
Laila Daniel (University of Helsinki, Finland); Markku Kojo (University of Helsinki, Finland)
pp. 392-400

11:20 *Performance of On-Off Traffic Stemming From Live Adaptive Segmented HTTP Video Streaming*
Tomas Kupka (University of Oslo, Norway); Pål Halvorsen (Simula Research Laboratory & Department of Informatics, University of Oslo, Norway); Carsten Griwodz (Simula Research Laboratory, Norway)
pp. 401-409

11:45 *Characterizing Cyberlocker Traffic Flows*
Aniket Mahanti (University of Auckland, New Zealand); Niklas Carlsson (Linköping University, Sweden); Martin Arlitt (University of Calgary, Canada); Carey Williamson (University of Calgary, Canada)
pp. 410-418

3C: MAC and PHY

Room: Palm
Chair: Jens Toelle (Fraunhofer FKIE / University of Bonn, Germany)

10:30 *Robust MAC-layer Rate Control Mechanism for 802.11 Wireless Networks*
Wei Yin (The University of Queensland, Australia); Peizhao Hu (NICTA, Australia); Jadwiga Indulska (The University of Queensland, Australia); Marius Portmann (University of Queensland, Australia); Jonathan Guerin (University of Queensland, Australia)

pp. 419-427

10:55 ***Network Coding Based SVC Multicast Over Broadband Wireless Networks***
Hao Zhou (University of Science and Technology of China, P.R. China); Yusheng Ji (National Institute of Informatics, Japan); Yu Gu (National Institute of Informatics, Japan); Baohua Zhao (, P.R. China)
pp. 428-435

11:20 ***Distributed Decode and Forward Beamforming***
Chris Walsh (Colorado School of Mines, USA); Douglas Hakkarinen (Colorado School of Mines, USA); Tracy Camp (Colorado School of Mines, USA)
pp. 436-444

11:45 ***Flexible Resource Allocation for Multicast in OFDMA Based Wireless Networks***
Xin Zhao (The University of New South Wales, Australia); Sanjay Jha (University of NSW, Australia)
pp. 445-452

12:10 - 13:30

Lunch break

13:30 - 15:10

4A: Wireless Sensor Networks: Routing

Room: Beach
Chair: Katrin Reitsma (Motorola Solutions, USA)

13:30 ***Efficient Geocasting to Multiple Regions in Large-Scale Wireless Sensor Networks***
Cuong Truong (Universität zu Lübeck, Germany); Kay Römer (University of Lübeck, Germany)
pp. 453-461

13:55 ***Near-Optimal Routing for Contour Detection in Wireless Sensor Networks***
Venkat Pulimi (University of Saskatchewan, Canada); Tuhin Paul (University of Saskatchewan, Canada); Kevin G Stanley (University of Saskatchewan, Canada); Derek Eager (University of Saskatchewan, Canada)
pp. 462-469

14:20 ***Adaptive HELLO for the Neighborhood Discovery Protocol***
Raphael Ernst (University of Bonn, Germany); Peter Martini (University of Bonn, Germany)
pp. 470-478

14:45 ***Maximizing Network Lifetime Via 3G Gateway Assignment in Dual-Radio Sensor Networks***
Xu Xu (The Australian National University, Australia); Weifa Liang (The Australian National University, Australia); Tim Wark (CSIRO, Australia); Jaein Jeong (Cisco Systems & UC Berkeley, USA)
pp. 479-486

4B: Cloud Computing and Data Centers

Room: Gulf
Chair: Tim Strayer (BBN Technologies, USA)

13:30 ***Network Capabilities of Cloud Services for a Real Time Scientific Application***
Dilip Kumar Krishnappa (University of Massachusetts Amherst, USA); Eric Lyons (University of Massachusetts Amherst, USA); David Irwin (University of Massachusetts, Amherst, USA); Michael Zink (University of Massachusetts Amherst, USA)
pp. 487-495

13:55 ***An Integrated Resource Allocation Scheme for Multi-Tenant Data-center***
Mohan Gurusamy (National University of Singapore, Singapore); Tho Ngoc Le (National University of Singapore, Singapore); Dinil Mon Divakaran (National University of Singapore, Singapore)
pp. 496-504

14:20 ***A Distributed Energy Saving Approach for Ethernet Switches in Data Centers***
Weisheng Si (University of Western Sydney, Australia); Javid Taheri (The University of Sydney, Australia); Albert Zomaya (The University of Sydney, Australia)
pp. 505-512

14:45 ***Large-Scale Measurement and Analysis of One-Way Delay in Hybrid Multicast Networks***
Sebastian Meiling (Hamburg University of Applied Sciences, Germany); Thomas C. Schmidt (Hochschule für Angewandte Wissenschaften Hamburg, Germany); Matthias Wählisch (Freie Universität Berlin, Germany)
pp. 513-520

4C: Quality of Service

Room: Palm
Chair: Salil Kanhere (The University of New South Wales, Australia)

13:30 ***How's My Network? Predicting Performance From Within a Web Browser Sandbox***
Murad Kaplan (Worcester Polytechnic Institute, USA); Mihajlo Zeljkovic (Worcester Polytechnic Institute, USA); Mark Claypool (Worcester Polytechnic Institute, USA); Craig Wills (Worcester Polytechnic Institute, USA)
pp. 521-528

13:55 ***A Real-Time Services Performance and Interference Mitigation for Femtocell Scenarios in LTE Networks***
Mauricio Iturralde (University of Paris 11 & LRI, France); Tara Ali Yahiya (University Paris Sud 11, France); Anne Wei (Conservation National des Arts et Metiers, France); André-Luc Beylot (IRIT Toulouse, France)
pp. 529-536

14:20 ***KBAC: Knowledge-Based Admission Control***
Doreid Ammar (INRIA & LIP, ENS Lyon, France); Thomas Begin (Université de Lyon 1, France); Isabelle Guérin Lassous (Université de Lyon - LIP, France); Ludovic Noirie (Alcatel-Lucent France, France)
pp. 537-544

14:45 ***Impact of Network Conditions on Delay-Stable Communications in Closed Industrial Control Networks***
David A Miller (Iowa State University, USA); Ahmed E. Kamal (Iowa State University, USA)
pp. 545-550

15:10 - 15:40

Tea break

15:40 - 17:45

5A: Wireless Sensor Networks: Optimization and Energy Efficiency

Room: Beach
Chair: Mohamed Younis (University of Maryland Baltimore County, USA)

15:40 ***Inference in Wireless Sensor Networks Based on Information Structure Optimization***
Wei Zhao (Purdue University Indianapolis, USA); Yao Liang (Indiana University Purdue University Indianapolis, USA)
pp. 551-558

16:05 *Optimization Trade-Offs in the Design of Wireless Sensor and Actor Networks*
Hyunbum Kim (The University of Texas at Dallas, USA); Jorge A. Cobb (The University of Texas at Dallas, USA)
pp. 559-567

16:30 *On Using Game Theory to Balance Energy Consumption in Heterogeneous Wireless Sensor Networks*
Xiao-Hui Lin (Shenzhen University & The University of Hong Kong, P.R. China); Hui Wang (Shenzhen University, P.R. China)
pp. 568-576

16:55 *Energy Efficient Data Survivability for WSNs Via Decentralized Erasure Codes*
Louai Al-Awami (Queen's University, Canada); Hossam S. Hassanein (Queen's University, Canada)
pp. 577-584

17:20 *An Approach for Bounding Breach Path Detection Reliability in Wireless Sensor Networks*
Mohamed H Shazly (University of Alberta, Canada); Ehab S. Elmallah (University of Alberta, Canada); Janelle Harms (University of Alberta, Canada)
pp. 585-592

15:40 - 17:20

5B: Overlay and P2P Networks

Room: Gulf
Chair: Oliver P. Waldhorst (Karlsruhe Institute of Technology (KIT), Germany)

15:40 *MP-DNA: A Novel Distributed Replica Placement Heuristic for WMNs*
Zakwan Al-Arnaout (Victoria University of Wellington, New Zealand); Jonathan Hart (Victoria University of Wellington, New Zealand); Qiang Fu (Victoria University of Wellington, New Zealand); Marcus Frean (Victoria University of Wellington, New Zealand)
pp. 593-600

16:05 *Dynamic File Bundling for Large-scale Content Distribution*
Song Zhang (University of Calgary, Canada); Niklas Carlsson (Linköping University, Sweden); Derek Eager (University of Saskatchewan, Canada); Zongpeng Li (University of Calgary, Canada); Anirban Mahanti (NICTA, Australia)
pp. 601-609

16:30 *CDN Request Routing to Reduce Network Access Cost*
Varun Khare (University of Arizona, USA); Beichuan Zhang (University of Arizona, USA)
pp. 610-617

16:55 *A Tale of Nine Internet Exchange Points: Studying Path Latencies Through Major Regional IXPs*
Mohammad Zubair Ahmad (University of Central Florida, USA); Ratan Guha (University of Central Florida, USA)
pp. 618-625

5C: Performance Modeling and Evaluation

Room: Palm
Chair: Nils Aschenbruck (University of Osnabrück, Germany)

15:40 *Safe Cities. A Participatory Sensing Approach*
Jaime Ballesteros (Florida International University, USA); Mahmudur Rahman (Florida International University, USA); Bogdan Carbunar (Florida International University, USA); Naphtali Rishe (Florida International University, USA)
pp. 626-634

16:05 ***HOPSCOTCH: An Adaptive and Distributed Channel Hopping Technique for Interference Avoidance in Wireless Sensor Networks***

Dingwen Yuan (Technische Universität Darmstadt, Germany); Michael Riecker (Technische Universität Darmstadt, Germany); Matthias Hollick (Technische Universität Darmstadt & Secure Mobile Networking Lab, Center for Advanced Security Research Darmstadt, Germany)

pp. 635-642

16:30 ***Agnostic Broadcast Rendezvous for Cognitive Radio Networks Using Channel Hopping***

Raphael M. Guedes (Federal University of Rio de Janeiro, Brazil); Marcel W. R. da Silva (Federal University of Rio de Janeiro, Brazil); Pedro S. Coutinho (Federal University of Rio de Janeiro, Brazil); José F. de Rezende (Federal University of Rio de Janeiro, Brazil)

pp. 643-650

16:55 ***Wireless Multi-Rate Scheduling: From Physical Interference to Disk Graphs***

Olga Goussevskaia (UFMG, Brazil); Luiz F. M. Vieira (Universidade Federal de Minas Gerais, Brazil); Marcos A. M. Vieira (Universidade Federal de Minas Gerais, Brazil)

pp. 651-658