

6th Annual IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks

22 – 26 June 2009 • Rome, Italy



FINAL PROGRAM

www.ieee-secon.org/2009



IEEE SECON BADGES

IEEE SECON Badges must be worn at all times and are necessary for admittance into all sessions, keynotes, panels, workshops, and receptions.

IEEE SECON SESSIONS

All IEEE SECON Sessions will be held at the Centro Congressi Cavour, Via Cavour 50/a, Tel. +39 06 4871777 Fax +39 06 4871077.

REGISTRATION HOURS

Monday 22 June	7:30 – 5:00
Tuesday 23 June	7:30 – 5:00
Wednesday 24 June	7:30 – 5:00
Thursday 25 June	7:30 – 5:00
Friday 26 June	7:30 – 5:00

IEEE SECON WELCOME RECEPTION

The Tuesday Welcome Reception will be held in Sala Cavour 6-7 at the Centro Congressi Cavour.

INTERNET ACCESS

Attendees will have wireless Internet access. Details will be posted.

TRANSPORTATION

By Train/Metro (Linee A e B): Roma Termini Station

On Foot: 150 mt. / 500 ft. away from Roma Termini Station

By Public Transportation: All ATAC Bus Lines stopping at Piazza dei Cinquecento

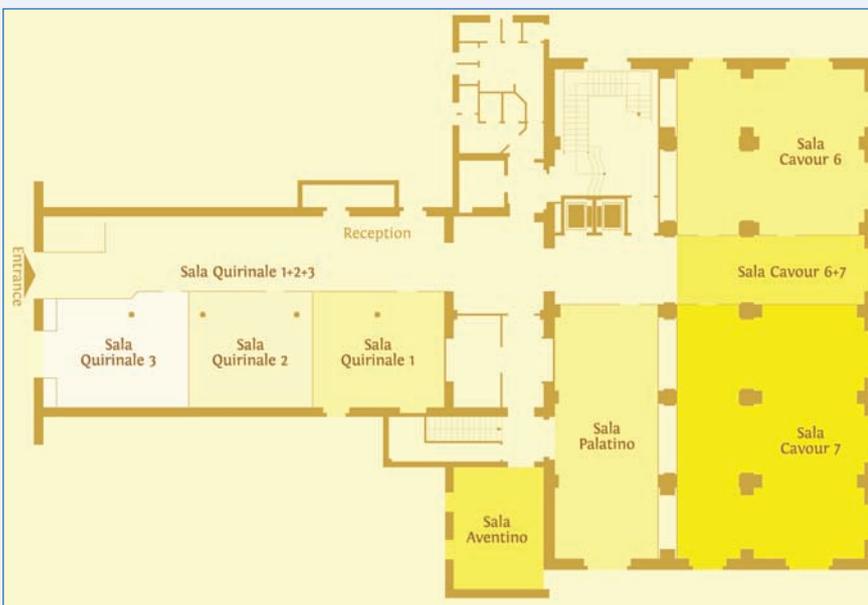
By Car: North side of Rome's Motorway Ring: take the Salaria Exit and follow City Centre signs all the way to Roma Termini Station. South side of Rome's Motorway Ring: take the Appia Exit and follow City Centre signs all the way to Roma Termini Station. Near Centro Congressi Cavour you'll find a couple of parking garages: Autorimessa Gioberti and Autorimessa Lupa

FRIENDLY REMINDER

Please make sure cell phones and other communication devices are set to a silent mode during active sessions. The speakers and audience thank you for your consideration.

CENTRO CONGRESSI CAVOUR FLOOR PLANS

GROUND FLOOR



FIRST FLOOR

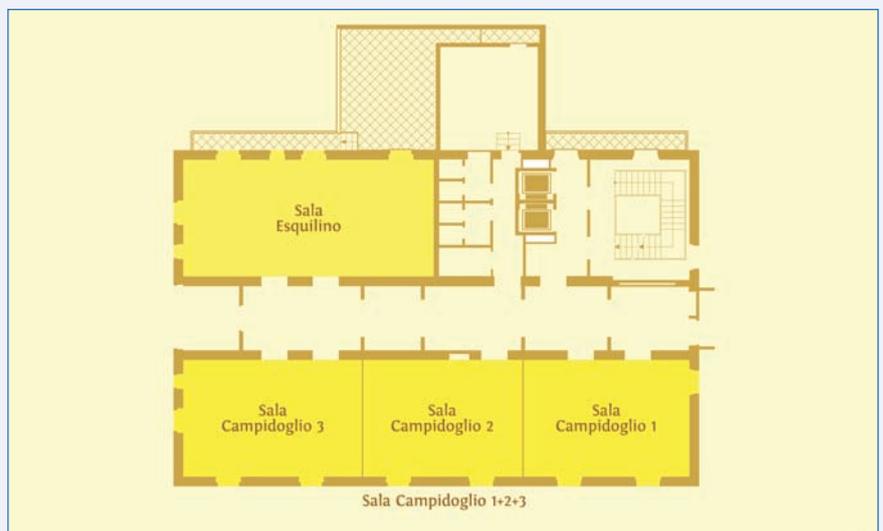




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WiNC Workshop5	IEEE SECON 2010 Preliminary Call for PapersIBC

PROGRAM AT A GLANCE

	Monday 22 June 2009		Tuesday 23 June 2009		Wednesday 24 June 2009			Thursday 25 June 2009		Friday 26 June 2009	
7:30-5:00	Registration										
8:30-9:00		WiNC 8:45 - 10:00	Opening Remarks		Panel II: Trends and Directions in Sensor Network Research			Scheduling	Sensor Networking II	Sensor Networking III	Protocols
9:00-10:00	WiMesh		Keynote: Amin Shokrollahi								
10:00-10:30	Break		Break		Break			Break		Break	
10:30-12:00	WiMesh	WiNC 10:30 - 11:45	Panel I: Cognitive Radio Networks: Possible Paths from Research to Real World		Energy awareness	Routing I		Challenged Networks I	Cognitive Radios	Optimal Strategies	Security and Reliability
12:00-13:30	Lunch Break (on your own)		Lunch Break (on your own)		Lunch Break (on your own)			Lunch Break (on your own)		Lunch Break (on your own)	
13:30-14:00	WiMesh	WiNC 13:00 - 15:15	Industry Talks		Link Layer I	Routing II	Poster / Demo	Cooperation	Security	Location	Network Coding
14:00-15:00			Demo/Poster Talks								
15:00-15:30	Break		Break		Break			Break		Break	
15:30-17:00	WiMesh	WiNC 15:45 - 17:00	SDR	Sensor Networking I	Dedicated Poster/Demo Session			Link Layer II	Routing III	Applications	Challenged Networks II
17:00-18:30			Poster/Demo Session								
18:30-20:30			Reception								

WELCOME



Mario Gerla

It is my pleasure to welcome you to the sixth edition of IEEE SECON, the premier conference on Wireless Communications with Sensor, Personal and Ad Hoc Networking applications. We are proud to offer this event for the first time outside of North America, in the Eternal City of Rome, after a very successful edition last year in San Francisco, USA. It is my honor to serve as General Chair.

We have an outstanding technical program, starting with three Workshops covering very timely topics, Wireless Mesh Networks (WIMESH), Software Defined Radios (SDR) and Wireless Network Coding (WINC). The main conference will begin with the keynote speech "Reliable Data Delivery on Unreliable Networks" by the creator of Raptor Codes and internationally renowned authority in coding Amin Shokrollahi of EPFL, Switzerland. The technical sessions will feature competitively selected papers in a broad range of wireless and mobile computing topics – from sensor networks to urban meshes, cellular services and wireless foundations and models. To complete the picture, there will be Poster and Demo sessions. The main theme that emerges from these diverse contributions, and the main message to our attendees, is the coming together of very different wireless technologies, from low power sensor radios to ad hoc networks, mesh and cellular networks to enable integrated, pervasive mobile computing. The synergy of these networks will provide the structure that can support and integrate emerging mobile applications ranging from mobile sensor platforms to vehicular networks and

broadband mobile Internet services.

Many people, through various Committees, have helped make this conference a success. To them goes my most sincere gratitude. In particular, my thanks to TCP Chairs Chiara Petrioli, Nitin Vaidya, and TCP Vice Chair Bhaskar Krishnamachari, along with all the TPC members for putting together an outstanding program; to Workshop Chair Katia Obraczka; to Panel Chairs Luigi Fratta and Cedric Westphal; to Publicity Chairs Stefano Basagni and Gaia Maselli; to Demo/Poster Chairs Antonio Capone and Suman Banerjee; to Publication Chair Taekyoung (Ted) Kwon; to Travel awards Chair Daji Qiao. A thank you and sincere appreciation to Web Chair Romit Roy Choudhury for promptly responding to our incessant requests for updates to the Conference Web Page. A special thank you to Local Arrangements Chair Francesca Cuomo for securing the beautiful and conveniently positioned Centro Congressi Cavour.

I wish to acknowledge the support of the Standing Committee: Fred Bauer, Nokia (Chair); Hamid Aghvami, King's College, London; Mischa Dohler, CTTC, Spain; Harvey Freeman, HAF Consulting, Inc.; Sung-Ju Lee, HP Labs; Prasant Mohapatra, University of California, Davis; Krishna Sivalingam, University of Maryland, Baltimore County. In particular, I must recognize Sung-Ju Lee for his diligent coaching in the early planning phases, Mischa Dohler for bringing in Patrons in this difficult economy and Chair Fred Bauer for his unbelievable energy in masterfully tying loose ends and keeping this entire operation financially sound. Last but not least, I appreciate the support of the IEEE staff, in particular Bruce Worthman as finance chair, Phyllis O'Neill for her contributions as IEEE SECON project manager, and Heather Ann Sweeney for her marketing efforts on behalf of IEEE SECON.

We acknowledge the invaluable sponsorship of IEEE Communications Society. Further, we gratefully acknowledge the support of our corporate supporters: HP, NOKIA, CTTC and CORONIS. Also, a special thanks to ComSoc for their generous contribution towards student travel fellowships. In a time of rising expenses, these contributions help make it possible to run an outstanding conference that is affordable.

I am cordially inviting you to attend the outstanding IEEE SECON 2009 program and enjoy the seductive beauty of the Eternal City.

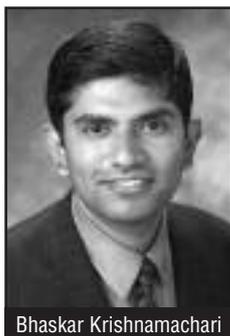
Mario Gerla, University of California, Los Angeles
IEEE SECON 2009 GENERAL CHAIR



Chiara Petrioli



Nitin Vaidya



Bhaskar Krishnamachari

Welcome to the 6th Annual IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON). We have an exciting program this year, comprising of 81 papers selected from 437 submissions. The selection process was quite competitive, and we had to reject many good papers due to the time constraints of the conference. The program committee members had the enormous task of reviewing a large number of papers. Despite the significant workload on the program committee, we are glad to report that most of the papers received at least three reviews. After the reviews were prepared, the program committee members discussed the papers during an e-mail discussion phase, and arrived at recommendations for the papers. The final set of papers was selected based on these recommendations.

We thank the authors for submitting their papers to IEEE SECON. Our heartfelt thanks to the program committee members for their hard work in reviewing the papers under tight time constraints.

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Tuesday 23 June 2009 • 9:00 - 10:00 • Rm: Sala Cavour 6-7

Amin Shokrollahi
EPFL

Reliable Data Delivery on Unreliable Networks

Delivery of data on packet-based networks is fast becoming an essential part of our lives. While in the past decade most such applications were confined to delivery of static data, such as files and pictures, applications in this decade have been defined by rich media and dynamic data, such as VoIP, IPTV, (flash) movies, and such. It is more than likely that in the decade to come data delivery applications will become even more involved, and will encompass delivery of data from anywhere to anyone at any time. The networks used in such applications can (and will) be ad hoc, and unreliable. Ensuring quality of service will thus become a challenging task.

One possible solution to these problems is furnished by fountain codes. For a given piece of content with n packets, say, a fountain code generates a potentially limitless stream of packets such that recovery of the original content is possible by receiving any number of packets roughly equal to n . In this talk, I will show how Fountain codes can be applied to the problem of reliable, robust, and speedy transmission of data over a heterogeneous network from one or multiple transmitters to one or multiple receivers. I will highlight how these codes are used for the design of reliable end-to-end data transmission systems in unreliable unicast and multicast networks, and briefly touch upon the theory of these codes. In the last part, the focus will be on some use cases in scenarios, such as wireless, and on standards which employ these codes.

Biography

Dr. Amin Shokrollahi obtained his PhD in Computer Science from the University of Bonn in 1991. From 1991 to 1995, he was an assistant professor at the University of Bonn. Thereafter, he had positions as a Senior Researcher at the International Computer Science Institute in Berkeley, Member of the Technical Staff at the Mathematics Research Center of Bell Laboratories, and Chief Scientist of the company Digital Fountain, which was recently sold to Qualcomm, Inc. Currently, he holds two chairs at the Ecole Polytechnique Federale de Lausanne, one in Mathematics and one in Computer Science. Dr. Shokrollahi has worked on a variety of topics, including coding theory, computational number theory and algebra, and computational/algebraic complexity theory. He is best known for his work on iterative decoding algorithms of graph based codes, an area in which he has extensively published and where he holds a number of granted and pending patents. He is the co-inventor of Tornado codes, and the inventor of Raptor codes. His codes have been standardized and successfully deployed in situations where data is to be reliably transmitted over lossy networks. Dr. Shokrollahi is a Fellow of the IEEE, and a member of the Scientific Council of the Swiss National Science Foundation. He was awarded the Best Paper Award of the IEEE IT Society in 2002 for his work on iterative decoding of LDPC codes, the IEEE Eric Sumner Award in 2007 for the development of Fountain Codes, the joint Communication Society/Information Theory Society best paper award of 2007 for his paper on Raptor Codes, and the prestigious Advanced Investigator Grant of the European Research Council which allows him to pursue frontier research of his choice in the next few years.

Fourth IEEE Workshop on Wireless Mesh Networks (WIMESH)

Monday 22 June • Rm: Sala Cavour 6 • Program Chairs: Paolo Santi, IIT-CNR, and Karthik Sundaresan, NEC Labs

9:00 - 10:00

Keynote: Marwan Krunz
(University of Arizona)

10:00 - 10:30 - Break

10:30 - 12:00

Session 1: Scheduling and Throughput Maximization

Clique-based Utility Maximization in Wireless Mesh Networks: Algorithm, Simulation, and Mathematical Analysis
Erwu Liu, Qinqing Zhang, Kin Leung

A Cross-Layer Architecture for Efficient Multi-Hop Communication in Multi-Channel Multi-Radio Wireless Mesh Networks
Marco Di Felice, Sara Pizzi, Antonella Molinaro, Luciano Bononi

Decoupled Optimization of Interference Aware Routing and Scheduling for Throughput Maximization in Wireless Relay Mesh Networks
Preetha Thulasiraman, Sherman Shen

12:00 - 13:30 - Lunch (On your own)

13:30 - 15:00

Session 2: Routing

Layer 2.5 Routing in Multi-Radio Wireless Mesh Networks
Stefano Avallone, Francesco Paolo D'Elia, Giorgio Ventre

Quantitative Measurement of Routing Restoration Strategies for Multi-hop Wireless Networks
Shanshan Jiang, Yuan Xue

DHT-based Cluster Routing Protocol for IEEE 802.11s Mesh Networks

Marcos Pinheiro, Francisco Vasques, Silvio Sampaio, Pedro Souto

15:00 - 15:30 - Break

15:30 - 17:00

Session 3: Measurements and Routing

Measurement Study of 802.11g based Wireless Mesh Network Links
Pulkit Gupta, Bharat Jain, Bhaskaran Raman, Purushottam Kulkarni

Interference-Aware Route Management in Wireless Mesh Networks
Youngbin Im, Jeongkeun Lee, Jinyoung Han, Sung-Ju Lee, Taekyoung Kwon

Inter-Piconet Route Discovery to Support 60 GHz based Wireless Mesh Networks
Xueli An, Ramin Hekmat

IEEE International Workshop on Wireless Network Coding (WINC)

Monday 22 June • Rm: Sala Cavour 7 • Program Chairs: Srihari Nelakuditi, University of South Carolina, and Yunnan Wu, Microsoft Research

8:45 - 9:00

Opening Remarks

9:00 - 10:00

Morning Keynote: Professor Dina Katabi (MIT)

10:00 - 10:30 - Break

10:30 - 11:45

Session 1: Efficient Network Coding Algorithms for Dynamic Networks

Alex Sprintson, Salim El Rouayheb, Mohammad Asad Chaudhry
(Texas A&M University, US)

A Distributed Framework for Network Coding Based on a Novel State Space Approach
Giuseppe Campobello, Alessandro Leonardi, Sergio Palazzo (University of Catania, IT)

On Distributed Rate Allocation for Network-Coded Systems

Amin Jafarian, Sang Hyun Lee, Sriram Vishwanath (University of Texas at Austin, US)
Christina Fragouli (EPFL, CH)

11:45 - 13:00 - Lunch (On your own)

13:00 - 14:00

Afternoon Keynote: Professor Suhas Diggavi (EPFL)

14:00 - 15:15

Session 2: Improving Network Coded Cooperation by Soft Information

Tobias Volkhausen, Dereje H. Woldegebreal, Holger Karl (University of Paderborn, DE)

Active Physical-Layer Network Coding for Cooperative Two-Way Relay Channels
Haishi Ning, Cong Ling, Kin Leung
(Imperial College, UK)

Joint Network and Channel Coding for Wireless Networks

Qiang Li, See Ho Ting, Chin Keong Ho
(Institute for Infocomm Research, SG)

15:15 - 15:45 - Break

15:45 - 17:00

Session 3: Non-Random Wireless Network Coding

Ketan Rajawat, Georgios B. Giannakis
(University of Minnesota, US)

Joint Network Coding and Power Control for Wireless Linear Networks

Tuan Tran (Oregon State University, US)

Factorization for Advanced Physical Layer Techniques in Network-Coded Wireless Communication Networks

Maximilian Riemensberger, Andreas Dotzler, Wolfgang Utschick (Technische Universität München, DE)

Fourth IEEE Workshop on Networking Technologies for Software Defined Radio (SDR) Networks

Tuesday 23 June • 15:30 - 17:00 • Rm: Sala Esquilino

Program Chairs: Petri Mähönen, RWTH Aachen University, and Heather Zheng, UCSB

Negotiating Multichannel Sensing and Access in Cognitive Radio Wireless Networks

Hua Liu, Bhaskar Krishnamachari (University of Southern California, US)
Qing Zhao (University of California, Davis, US)

Cooperative Detection and Spectrum Reuse using a Network Coded Cognitive Control Channel

Nicola Baldo (Centre Tecnològic de Telecomunicacions de Catalunya - Barcelona, ES)
Alfred Akerjadh, Michele Zorzi (Department of Information Engineering - University of Padova, IT)

Performance Study on WiFi/WiMAX Multi-radio Devices

Xue Yang, Dmitry Akhmetov, York Liu
(Corporate Technology Group, Intel Corporation, US)

Modeling Primary System Activity in Dynamic Spectrum Access Networks by Aggregated ON/OFF-Processes

Matthias Wellens, Janne Riihijarvi, Petri Mähönen
(RWTH Aachen University, DE)

A Common Application Requirement Interface for Cognitive Wireless Networks

Janne Riihijarvi, Marina Petrova, Petri Mähönen
(RWTH Aachen University, DE)

INDUSTRY TALKS

Tuesday 23 June 2009, 13:30 - 14:00 • Rm: Sala Cavour 6-7

Discover the M2M World with the Wavenis Open Standard Alliance

Christophe Dugas (Coronis, FR)

Internet of Things Goes Wireless - IETF, M2M and the Road Ahead

Mischa Dohler (CTTC, ES)

DEMONSTRATIONS

Tuesday 23 June 2009, 13:30 - 18:30 • Rm: Sala Palatino

MoteMaster: A Scalable Sensor Network Testbed for Rapid Protocol Performance Evaluation

Andreas Achtzehn, Elena Meshkova, Junaid Ansari, Petri Mähönen (RWTH Aachen University, DE)

Reprogramming over the Air and Sensor Island Management through Synapse++

Nicola Bui, Michele Rossi, Cristiano Tapparello, Michele Zorzi (University of Padova, IT)

Experimental Study of Security Architectures for Wireless Mesh Networks

Fabio Martignon (Università di Bergamo, IT)
Stefano Paris (Politecnico di Milano, IT)

The Virtual Trainer: Supervising Movements Through a Wearable Wireless Sensor Network

Stefano Melzi, Luca Borsani, Matteo Cesana (Politecnico di Milano, IT)

Context-aware Opportunistic File Sharing Service

Marco Conti, Franca Delmastro, Andrea Passarella (IIT-CNR, IT)

Mesh Your Senses: Multimedia Applications over WiFi-based Wireless Mesh Networks

Roberto Riggio, Tinku Rasheed (Create-Net Research, IT)
Karina Gomez (Create-Net, EC)

A Reconfigurable Middleware for Dynamic Management of Heterogeneous Applications in Multi-Gateway Mobile Sensor Networks

Alessandro Laurucci, Stefano Melzi, Matteo Cesana (Politecnico di Milano, IT)

Wednesday 24 June 2009, 13:30 - 17:00 • Rm: Sala Palatino

The OLSR mDNS Extension for Service Discovery

Francesco Saverio Proto, Claudio Pisa (University of Rome "Tor Vergata", IT)

Towards Fully IP-enabled IEEE 802.15.4 LR-WPANS

Francesca Lo Piccolo, Donato Battaglino, Lorenzo Bracciale, Nicola Blefari-Melazzi (University of Roma Tor Vergata (Italy), IT)

Posters

Tuesday 23 June 2009, 13:30 - 18:30 • Rm: Sala Palatino

QoS-oriented Integrated Network Planning for Industrial Wireless Sensor Networks

Feng Chen (Siemens AG Automation and Drives, DE)
Reinhard German (University of Erlangen, DE)
Falko Dressler (University of Erlangen, DE)

Experiments on Binary Sensor Networks for Estimation of Target Perimeter and Size

Hiroshi Saito, Yutaka Arakawa (NTT, JP)
Shigeo Shioda, Kei Tano (Chiba University, JP)

Power Management for Acoustic Underwater Networks

Iyad Tumar, Anuj Sehgal, Juergen Schoenwaelder (Jacobs University Bremen, DE)

A Generic Cognitive Radio for Evaluating Coexistence Optimized Industrial Automation Systems

Kaleem Ahmad (inIT, University of Applied Sciences, DE)

Security and Privacy Issues for Inter-vehicle Communications in VANETs

Tat Wing Chim, Siu Ming Yiu, Lucas C. K. Hui, Victor Li (University of Hong Kong, CN)

Towards a User-centric Network Optimization Engine

Elena Meshkova, Andreas Achtzehn, Janne Riihijärvi, Petri Mähönen (RWTH Aachen University, DE)

An Experimental Study of Signal Propagation and Network Performance in Monitoring of Food Transportation

Shaoping Yuan, Markus Becker, Reiner Jedermann, Carmelita Görg, Walter Lang (University of Bremen, DE)

Fine-Grained Tracking of Human Mobility in Dense Scenarios

Sabrina Gaito, Elena Pagani, Gian Paolo Rossi (Università degli Studi di Milano, IT)

A Model-based Monitoring Scheme for Disruption-tolerant Underwater Sensor Networks

Daniela Tulone (MIT, US)

Coordinated Search with a Swarm of UAVs

Sonia Waharte, Niki Trigoni, Simon Julier (University College London, UK)

P2P over Mobile Ad Hoc Networks

Antonio Marques, Fernando Silva, Rui Rocha (IST - Technical University of Lisbon, PT)

Prediction based Energy-Efficient Task Allocation for Delay-Constrained Wireless Sensor Networks

Wendong Xiao (Institute for Infocomm Research, SG)
Siow Meng Low (National University of Singapore, SG)
Chen Khong Tham (Institute for Infocomm Research, SG)
Sajal Das (University of Texas, Arlington, US)

A Security Framework for SenSearch

Jyh-How Huang, John Black, Shivakant Mishra (University of Colorado, US)

On Path Coverage of Wireless Sensor Networks

Moslem Noori, Sahar Movaghati, Masoud Ardakani (University of Alberta, CA)

Wednesday 24 June 2009, 13:30 - 17:00 • Rm: Sala Palatino

Dynamic Energy Efficient Protocol for Reliable and Timely Communications for Wireless Sensor Networks in Control and Automation

Piergiuseppe Di Marco, Pangun Park, Carlo Fischione, Karl Henrik Johansson (Royal Institute of Technology, SE)

Optimal Frame Tuning for Aloha Protocols in RFID Networks

Tom La Porta (Penn State University, US)
Gaia Maselli, Chiara Petrioli (University of Rome "La Sapienza", IT)

Geometry-aware Probabilistic Communications for Urban Vehicular Ad Hoc Networks

Mohammad Nekoui, Hossein Pishro-Nik (University of Massachusetts, Amherst, US)

Invited Session on European Projects

Organizer: **Jorge Pereira**, European Union, BE

Wednesday 24 June 2009, 13:30 - 17:00 • Rm: Sala Palatino

Demonstrations

A Development Platform for Integrating Wireless Devices and Sensors into Ambient Intelligence systems

Markus Eisenhauer (Fraunhofer FIT, DE)
Peter Rosengren (CNet Svenska AB, SE)
Pablo Antolin (Telefonica I+D, ES)

Reconfiguring Crypto Hardware Accelerators on Wireless Sensor Nodes

Steffen Peter, Oliver Stecklina (IHP, Frankfurt/Oder, DE)
Jorge Portilla, Eduardo de la Torre (Universidad Politécnic de Madrid, ES)
Peter Langendoerfer (IHP, Frankfurt/Oder, DE)
Teresa Riesgo (Universidad Politécnic de Madrid, ES)

Pervasive Computing In Transport Embedded Information Systems

Antonio Marqués, Manuel Serrano (ETRA I+D, ES)

POBICOS Development Tools for Opportunistic Pervasive Computing

Jarosław Domaszewicz, Aleksander Pruszkowski, Paweł Cieślak,
Tomasz Paczesny, Michał Rój (Warsaw University of Technology, PL)
Spyros Lalis, Giorgis Georgakoudis, Manos Koutsoubelias
(Center for Research and Technology Thessaly, GR)

Wirelessly Accessible Sensor Populations (WASP)

M. Bennebroek (Philips Research, NL)
J. Ansari, A. Kovacevic, X. Zhang, E. Meshkova, P. Mähönen
(Aachen University, DE)

Posters

CHOSen - Cooperative Hybrid Objects Sensor Networks

Thomas Herndl (Infineon Technologies, AT)
Giuliana Zennaro (Centro Ricerche Fiat, IT)
Jirka Klau (EADS Innovation Works, DE)
Pierre-Damien Berger (Commissariat à l'Energie Atomique, FR)
Álvaro Álvarez Vázquez (ACORDE Technologies S.A., ES)
Stefan Mahlkecht (Vienna University of Technology, AT)
Miroslav Konecny (Ardaco a.s., SK)
Michael Beigl (Technische Universität Braunschweig, DE)
Wolfgang Pribyl (Graz University of Technology, AT)

European Research on Cooperating Objects

Pedro José Marrón, Daniel Minder (University of Bonn, DE)

Wireless Ventilation Control for Large-Scale Systems: the Mining Industrial Case

M. D. Di Benedetto, A. D'Innocenzo, (DEWS - University of L'Aquila, IT)
C. Fischione, (KTH, SE)
A. J. Isaksson, (Vasterås, SE)
K. H. Johansson, (KTH, SE)
S.-I. Niculescu, (LSS-SUPELEC, FR)
S. Olaru, G. Sandou, (SUPELEC, FR)
F. Santucci, E. Serra, S. Tennina, U. Tiberi (DEWS-University of L'Aquila, IT)
E. Witrant (Université Joseph Fourier / GIPSA-lab, FR)

Performance Control in Wireless Sensor Networks

C. Sreenan, J. Sa Silva (University of Coimbra, PT)
C. Boano, A. Dunkels, Z. He, T. Voigt (SICS, SE)
R. Eiras (Petrogal, PTI)
V. Vassiliou (University of Cyprus, CS)
G. Hackenbroich, A. Klein, D. Agrawal (SAP AG, DE)
L. Wolf (Technical Univ. of Braunschweig, DE)
U. Roedig, J. Brown (Lancaster University, UK)

SERAN: a Protocol for Clustered WSNs in Industrial Control and Automation

A. Bonivento (University of California, Berkeley, US)
C. Fischione (KTH Royal Institute of Technology, SE)
A. Sangiovanni-Vincentelli (University of California, US)

Integrated Platform for Autonomic Computing

Christoforos Panayiotou (University of Cyprus, CS)
Vassileios Tsetsos, Stathes Hadjiefthymiades
(National & Kapodistrian University of Athens, GR)
Eleftherios Fytros (Siemens A. E., GR)
George Samaras (University of Cyprus, CS)
Damien Piquet (Centre Suisse d'Electronique et de Microtechnique, CH)

LocON – a Platform for an Inter-Working of Embedded Localisation and Communication Systems

Sylvie Couronné, Niels Hadaschik, Marc Faßbinder, Thomas von der Grün
(Fraunhofer Institute for Integrated Circuits IIS, DE)
Martin Klepal, Widyawan (Cork Institute of Technology, IE)
Maarten Weyn (Artesis University College, BE)
Tim Denis (Perlocus 52M, BE)

An Embedded Middleware Platform for Pervasive and Immersive Environments for-All

R. Baldoni, C. Di Ciccio, M. Mecella, F. Patrizi, L. Querzoni, G. Santucci
(SAPIENZA Università di Roma, IT)
S. Dustdar, F. Li, H.-L. Truong (Technische Universitaet Wien, AT)
L. Albornos, F. Milagro, P. Antolin Rafael
(Telefónica Investigación y Desarrollo, ES)
R. Ayani, K. Rasch (Kungliga Tekniska Hogskolan, SE)
M. Garcia Lozano (Swedish Defence Research Agency, SE)
M. Aiello, A. Lazovik (University of Groningen, NL)
A. Denaro, G. Lasala, P. Pucci (Elsag Datamat, IT)
C. Holzner (Guger Technologies OEG, DE)
F. Cincotti, F. Aloise (Istituto Santa Lucia, IT)

Secure, Mobile Visual Sensor Networks Architecture

E. Ladis (Hellenic Aerospace Industry, GR)
I. Papaefstathiou (Technical University of Chania, GR)
R. Marchesani (Thales Telecommunications, IT)
K. Tuinenbreijer (Philips Consumer Lifetime, NL)
P. Langendörfer (IHP, DE)
T. Zahariadis, H. C. Leligou (Technological Educational Institute of Halkida, GR)
L. Redondo (Metodos y Tecnologia, ES)
T. Riesgo (Universidad Politécnic de Madrid, ES)
P. Kannegiesser (Lippert, DE)
M. Berekovic (Technische Universität Braunschweig, DE)
C. J. M. van Rijn (Nanosens, NL)

Deployment and Enterprise Integration of Energy-efficient Wireless Sensor Networks

M. Bennebroek (Philips Research, NL)
J. Ansari, A. Kovacevic, X. Zhang, E. Meshkova, P. Mähönen
(Aachen University, DE)

Tuesday 23 June 2009

Tuesday 23 June 2009, 10:30 - 12:00 • Rm: Sala Cavour 6-7

Panel I: Cognitive Radio Networks: Possible Paths from Research to Real World

Bhaskar Krishnamachari (USC, US)
Marwan Krunz (University of Arizona, US)
Petri Mähönen (Aachen University, DE)

Tuesday 23 June 2009, 15:30 - 17:00 • Rm: Sala Cavour 6-7

Selection and Orientation of Directional Sensors for Coverage Maximization

Giordano Fusco, Himanshu Gupta (SUNY, Stony Brook, US)

NoSE: Efficient Maintenance and Initialization of Wireless Sensor Networks

Andreas Meier, Matthias Woehrle, Mischa Weise, Jan Beutel, Lothar Thiele (ETH Zurich, CH)

Traffic-Aware Relay Node Deployment for Data Collection in Wireless Sensor Networks

Feng Wang (Simon Fraser University, CA)
Dan Wang (Hong Kong Polytechnic University, HK)
Jiangchuan Liu (Simon Fraser University, CA)

Node Reclamation and Replacement for Long-lived Sensor Networks

Bin Tong (Iowa State University, US)
Guiling Wang (New Jersey Institute of Technology, US)
Wensheng Zhang (Iowa State University, US)
Chuang Wang (Iowa State University, US)

Wednesday 24 June 2009

Wednesday 24 June 2009, 8:30 - 10:00 • Rm: Sala Cavour 6-7

Panel II: Trends and Directions in Sensor Network Research

Jorge Pereira (European Union, BE)
Alhussein Abouzeid (NSF, US)
Roberto Verdone (University of Bologna, IT)

Wednesday 24 June 2009, 10:30 - 12:00 • Rm: Sala Cavour 6-7

Energy Awareness

Modular Plug-and-Play Power Resources for Energy-Aware Wireless Sensor Nodes

Alex Weddell, Neil Grabham, Nick Harris, Neil White (University of Southampton, UK)

Energy-Aware Simulation for Wireless Sensor Networks

Geoff Merrett, Neil White, Nick Harris, Bashir Al-Hashimi (University of Southampton, UK)

DEAMON: Energy-efficient Sensor Monitoring

Minho Shin, Patrick Tsang, David Kotz, Cory Cornelius (Dartmouth College, US)

Towards Continuous Asset Tracking: Low-Power Communication and Fail-Safe Presence Assurance

Bernhard Firner (WINLAB, Rutgers University, US)
Yanyong Zhang (Rutgers University, US)
Prashant Jadhav (WINLAB, Rutgers University, US)
Richard Howard (PnP Networks, US)
Wade Trappe (WINLAB, Rutgers University, US)
Eitan Fenson (PnP Networks, US)

Wednesday 24 June 2009, 10:30 - 12:00 • Rm: Sala Cavour 6-7

Lukewarm Potato Forwarding: A Biased Random Walk Routing Protocol for Wireless Sensor Networks

Roberto Berardi (Università degli Studi di Roma "La Sapienza", IT)
Roberto Baldoni (La Sapienza Roma, IT)
Ravi Prakash (University of Texas, Dallas, US)

Interference Aware Routing and Scheduling in Wireless Backhaul Networks with Smart Antennas

Yajing Xu (Beijing University of Posts & Telecommunications, CN)
Jian Tang, Shen Wan, Richard Wolff (Montana State University, US)

Practical Connectivity-based Routing in Wireless Sensor Networks with Dimension Reduction

Shao Tao, Akkibebal L. Ananda, Mun Choon Chan (National University of Singapore, SG)

Sidewinder: A Predictive Data Forwarding Protocol for Mobile Wireless Sensor Networks

Matthew Keally, Gang Zhou (College of William and Mary, US)
Guoliang Xing (Michigan State University, US)

Wednesday 24 June 2009, 13:30 - 15:00 • Rm: Sala Cavour 6-7

ARC: Joint Adaptation of Link Rate and Contention Window for IEEE 802.11 Multi-rate Wireless Networks

An-chih Li (National Chiao-Tung University, TW)
Ting-Yu Lin (University of Illinois, Urbana Champaign, US)
Ching-Yi Tsai (National Chiao Tung University, TW)

Idle Detection Based Optimal Throughput Rate Adaptation in Multi-Rate WLANs

Liu Bin, Hongkun Yang (Tsinghua University, CN)

Elucidating the Instability of Random Access Wireless Mesh Network

Adel Aziz (EPFL, CH)
David Starobinski (Boston University, US)
Patrick Thiran (EPFL, CH)

Performance Analysis of GTS Allocation in Beacon Enabled IEEE 802.15.4

Pangun Park, Carlo Fischione, Karl-Henrik Johansson (Royal Institute of Technology, SE)

Wednesday 24 June 2009, 13:30 - 15:00 • Rm: Sala Cavour 6-7

Slab Routing: Adapting Two-Dimensional Geographic Routing to Three-Dimensions

Paul Chiang, Wen-Chih Peng (National Chiao Tung University, TW)

CREST: An Opportunistic Forwarding Protocol Based on Conditional Residual Time

Sunil Srinivasa (University of Notre Dame, US)
Sudha Krishnamurthy (Deutsche Telekom Laboratories, DE)

Proactive Data Dissemination to Mission Sites

Fangfei Chen (Pennsylvania State University, US)
Matthew Johnson (City University of New York, US)
Amotz Bar-Noy (Brooklyn College & Graduate Center, CUNY, US)
Iris Fermin (SEA, UK)
Tom La Porta (Penn State University, US)

COFFEE: A Context-Free Protocol for Enforcing Data Forwarding in Wireless Ad Hoc Networks

Chengqi Song, Qian Zhang (Hong Kong University of Science and Technology, HK)

Thursday 25 June 2009

Thursday 25 June 2009, 8:30 - 10:00 • Rm: Sala Cavour 6-7 Scheduling

Channel Access Throttling for Improving WLAN QoS

Bo Han (University of Maryland, US)
Lusheng Ji, Seungjoon Lee, Robert Miller (AT&T Labs - Research, US)
Samrat Bhattacharjee (University of Maryland, College Park, US)

Optimal One-Shot Stream Scheduling for MIMO Links in a Single Collision Domain

Ramya Srinivasan, Douglas Blough (Georgia Institute of Technology, US)
Paolo Santi (IIT-CNR, IT)

Low Complexity Stable Link Scheduling for Maximizing Throughput in Wireless Networks

Xiang-Yang Li, Xufei Mao (Illinois Institute of Technology, US)
Xiaobing Wu (Nanjing University, CN)
Shao-Jie Tang (Illinois Institute of Technology, US)

A Cross-Layer Optimized Distributed Scheduling Algorithm for Peer-to-Peer Video Streaming over Wireless Multi-hop Mesh Networks

Haiyan Luo, Dalei Wu, Song Ci (University of Nebraska-Lincoln, US)

Thursday 25 June 2009, 8:30 - 10:00 • Rm: Sala Cavour 6-7 Sensor Networking II

PRIDE: A Data Abstraction Layer for 2-tier Large-Scale Sensor Networks

Woochul Kang, Sang Son, John Stankovic (University of Virginia, US)

Separation of Sensor Control and Data in Closed-Loop Sensor Networks

Victoria Manfredi, Jim Kurose (University of Massachusetts, Amherst, US)
Naceur Malouch (Université Pierre et Marie Curie - Paris 6, FR)
Chun Zhang (IBM T.J. Watson Research Center, US)
Michael Zink (University of Massachusetts, Amherst, US)

Efficient Pattern Detection in Extremely Resource-Constrained Devices

Michael Zoumboulakis, George Roussos
(Birkbeck College, University of London, UK)

Blindly Calibrating Mobile Sensors Using Piecewise Linear Functions

Chao Wang, Parmesh Ramanathan, Kewal Saluja
(University of Wisconsin, Madison, US)

Thursday 25 June 2009, 10:30 - 12:00 • Rm: Sala Cavour 6-7 Challenged Networks I

Featherlight Information Network with Delay-Endurable RFID Support (FINDERS)

Hongyi Wu (University of Louisiana at Lafayette, US)

An Epidemiological Study of Information Dissemination in Mobile Networks

Cedric Westphal (Docomo Labs USA, US)
Karim Seada (Nokia Research Center, US)
Charles Perkins (Independent, US)
Ryuji Wakikawa (Toyota ITC, JP)

A Low-energy, Multi-copy Inter-contact Routing Protocol for Disaster Response Networks

Md Yusuf Uddin, Hossein Ahmadi, Tarek Abdelzaher, Robin Kravets
(University of Illinois, Urbana Champaign, US)

Thursday 25 June 2009, 10:30 - 12:00 • Rm: Sala Cavour 6-7 Cognitive Radios

Spectrum Opportunity-Based Control Channel Assignment in Cognitive Radio Networks

Loukas Lazos, Sisi Liu, Marwan Krunz (University of Arizona, US)

Cognitive DISH: Virtual Spectrum Sensing Meets Cooperation

Tie Luo, Mehul Motani (National University of Singapore, SG)

Optimal Admission and Eviction Control of Secondary Users at Cognitive Radio HotSpots

Hyoil Kim, Kang G. Shin (University of Michigan, US)

On the Impact of Introducing Advanced Devices into a Cognitive Radio Network

Joe Bater, Kenneth Brown (University College Cork, IE)
Linda Doyle (Trinity College Dublin, IE)

Thursday 25 June 2009, 13:30 - 15:00 • Rm: Sala Cavour 6-7 Cooperation

Cooperation in Ad Hoc Networks with Noisy Channels

Wenjing Wang, Mainak Chatterjee (University of Central Florida, US)

The Effects of Node Cooperation Level on Routing Performance in Delay Tolerant Networks

Giovanni Resta (Istituto di Informatica e Telematica, IT)
Paolo Santi (IIT-CNR, IT)

On the Effectiveness of Cooperation in Carrier Sense-Based Ad Hoc Networks

Marco Levorato, Andrea Munari, Michele Zorzi (University of Padova, IT)

Pilot-Assisted Distributed Co-Phasing for Wireless Sensor Networks

Ramesh Annavajjala (Mitsubishi Electric Research Labs, US)
Chandra Murthy (Indian Institute of Science, IN)

Thursday 25 June 2009, 13:30 - 15:00 • Rm: Sala Cavour 6-7 Security

A Simple Non-Interactive Pairwise Key Establishment Scheme in Sensor Networks

Chia-Mu Yu (Academia Sinica and National Taiwan University, TW)
Chun-Shien Lu (Institute of Information Science, Academia Sinica, TW)
Sy-Yen Kuo (National Taiwan University, TW)

Catching Packet Droppers and Modifiers in Wireless Sensor Networks

Chuang Wang, Taiming Feng, Jinsook Kim (Iowa State University, US)
Guiling Wang (New Jersey Institute of Technology, US)
Wensheng Zhang (Iowa State University, US)

Detecting Spoofing Attacks in Mobile Wireless Environments

Jie Yang, Yingying Chen (Stevens Institute of Technology, US)
Wade Trappe (WINLAB, Rutgers University, US)

TACKing Together Efficient Authentication, Revocation, and Privacy in VANETS

Ahren Studer, Elaine Shi (Carnegie Mellon University, US)
Fan Bai (General Motors, US)
Adrian Perrig (Carnegie Mellon University, US)

Thursday 25 June 2009, 15:30 - 17:00 • Rm: Sala Cavour 6-7 Link Layer II

Comparison of Data-driven Link Estimation Methods in Low-power Wireless Networks

Hongwei Zhang (Wayne State University, US)
Lifeng Sang, Anish Arora (Ohio State University, US)

Experimental Anatomy of Packet Loss in Wireless Mesh Networks

Hua Yu, Prasant Mohapatra, Daniel Wu (University of California, Davis, US)

Performance Evaluation of Link Quality Estimation Metrics for Static Multihop Wireless Sensor Networks

Tao Liu, Ankur Kamthe, Lun Jiang, Alberto Cerpa
(University of California, Merced, US)

Medium Access Control Analytical Modeling and Optimization in Unslotted IEEE 802.15.4 Wireless Sensor Networks

Carlo Fischione (Royal Institute of Technology, SE)
Sinem Ergen (University of California, Berkeley, US)
Pangun Park (Royal Institute of Technology, SE)
Karl-Henrik Johansson (KTH, SE)
Alberto Sangiovanni-Vincentelli (University of California, Berkeley, US)

Thursday 25 June 2009, 15:30 - 17:00 • Rm: Sala Cavour 6-7
Routing III

Diversity Routing for Multi-hop Wireless Networks with Cooperative Transmissions

Sriram Lakshmanan, Raghupathy Sivakumar
 (Georgia Institute of Technology, US)

PROSE: Scalable Routing in MANETs Using Prefix Labels and Distributed Hashing

Dhananjay Sampath, JJ Garcia-Luna-Aceves
 (University of California at Santa Cruz, US)

Resilient Cluster Leader Election for Wireless Sensor Networks

Qi Dong, Donggang Liu (University of Texas at Arlington, US)

To Hop or Not to Hop: Network Architecture for Body Sensor Networks

Anirudh Natarajan, Buddhika De Silva (University of Singapore, SG)
 Kok Kiong Yap (Stanford University, US)
 Mehul Motani (National University of Singapore, SG)

Friday 26 June 2009

Friday 26 June 2009, 8:30 - 10:00 • Rm: Sala Cavour 6-7
Sensor Networking III

An Optimal Sensing Framework Based on Spatial RSS-profile in Cognitive Radio Networks

Alexander Min, Kang G. Shin (University of Michigan, US)

Power control and resource allocation in sensor networks using Random Markov Field Theory

Sylvie Perreau (University of South Australia, AU)

A Packet-Centric Approach to Distributed Rateless Coding in Wireless Sensor Networks

Dejan Vukobratovic, Cedomir Stefanovic (University of Novi Sad, RS)
 Vladimir Crnojevic (Novi Sad, Serbia, YU)
 Francesco Chiti, Romano Fantacci (University of Florence, IT)

DEAL: Discover and Exploit Asymmetric Links in Dense Wireless Sensor Networks

Bin Bin Chen (National University of Singapore, SG)
 Shuai Hao (University of Southern California, US)
 Mingze Zhang, Mun Choon Chan, Akkihebbal L. Ananda
 (National University of Singapore, SG)

Friday 26 June 2009, 8:30 - 10:00 • Rm: Sala Cavour 6-7
Transport and Application Layers

Stream-oriented Lossless Packet Compression in Wireless Sensor Networks

Andreas Reinhardt (Technische Universität Darmstadt, DE)
 Matthias Hollick (Universidad Carlos III de Madrid, DE)
 Ralf Steinmetz (Technische Universität Darmstadt, DE)

On The Accuracy of TCP Throughput Prediction for Opportunistic Wireless Networks

Mariyam Mirza, Kevin Springborn, Suman Banerjee, Paul Barford,
 Michael Blodgett, Xiaojin Zhu (University of Wisconsin-Madison, US)

Forepressure Transmission Control for Wireless Video Sensor Network

Chong Luo (Microsoft Research Asia, CN)
 Wei Pu (University of Science and Technology of China, CN)
 Chang Wen Chen (State University of New York, Buffalo, US)
 Feng Wu (Microsoft Research Asia, CN)
 Jun Sun (Shanghai Jiao Tong University, CN)

Application-Centric Routing for Video Streaming over Multi-hop Wireless Networks

Dalei Wu, Song Ci, Haiyan Luo (University of Nebraska-Lincoln, US)

Friday 26 June 2009, 10:30 - 12:00 • Rm: Sala Cavour 6-7
Optimal Strategies

Order-Optimal Data Collection in Wireless Sensor Networks: Delay and Capacity

Siyuan Chen, Yu Wang (University of North Carolina, Charlotte, US)
 Xiang-Yang Li (Illinois Institute of Technology, US)
 Xinghua Shi (University of Chicago, US)

Capacity Bounds for Large Scale Wireless Ad Hoc Networks Under Gaussian Channel Model

Xiang-Yang Li, Shao-Jie Tang, Xufei Mao (Illinois Institute of Technology, US)

Maximize the Lifetime of a Data-gathering Wireless Sensor Network

Shuguang Xiong (Harbin Institute of Technology, CN)

Control-theoretic Optimization of Utility over Mission Lifetimes in Multi-hop Wireless Networks

Sharanya Eswaran (Pennsylvania State University, US)
 Archan Misra (Telcordia Technologies, US)
 Tom La Porta (Penn State University, US)

Friday 26 June 2009, 10:30 - 12:00 • Rm: Sala Cavour 6-7
Security and Reliability

Preserving Source-Location Privacy in Wireless Sensor Networks

Yun Li, Jian Ren (Michigan State University, US)

Towards Lightweight Secure Communication Protocols for Passive RFIDs

Dijiang Huang, Harsh Kapoor (Arizona State University, US)

Bargain-based Stimulation Mechanism for Selfish Mobile Nodes in Participatory Sensing Network

Xiaojuan Xie, Hongyi Wu, Haining Chen
 (University of Louisiana, Lafayette, US)

Fault Localization Using Passive End-to-End Measurement and Sequential Testing for Wireless Sensor Networks

Bing Wang, Wei Wei, Wei Zeng, Krishna Pattipati
 (University of Connecticut, US)

Friday 26 June 2009, 13:30 - 15:00 • Rm: Sala Cavour 6-7
Location

Cross-layer Enhanced Source Location Privacy in Sensor Networks

Min Shao, Wenhui Hu, Sencun Zhu, Guohong Cao (Penn State University, US)
 Srikanth Krishnamurthy (University of California, Riverside, US)
 Tom La Porta (Penn State University, US)

R-Factor: A New Parameter to Enhance Location Accuracy in RSSI Based Real-time Location Systems

Mohammed Basheer, Sarangapani Jagannathan
 (Missouri University of Science and Technology, US)

Empirical Evaluation of the Limits on Localization using Signal Strength

Gayathri Chandrasekaran, Mesut Ali Ergin (Rutgers University, US)
 Jie Yang (Stevens Institute of Technology, US)
 Song Liu (Rutgers University, US)
 Yingying Chen (Stevens Institute of Technology, US)
 Marco Gruteser (WINLAB / Rutgers University, US)
 Richard Martin (Rutgers University, US)

Hansel: Distributed Localization in Passive Wireless Environments

Marco Zuniga (National University of Ireland, Galway, IE)

Friday 26 June 2009, 13:30 - 15:00 • Rm: Sala Cavour 6-7
Network Coding

Multicast Throughput Order of Network Coding in Wireless Ad Hoc Networks

Shirish Karande (Philips, US)
 Zheng Wang, Hamid Sadjadpour, JJ Garcia-Luna-Aceves
 (University of California, Santa Cruz, US)

Internet Service in Developing Regions Through Network Coding

Mike Wittie, Kevin Almeroth, Elizabeth Belding
 (University of California, Santa Barbara, US)
 Ivica Rimac, Volker Hilt (Bell Labs/Alcatel-Lucent, US)

XOR Rescue: Exploiting Network Coding in Lossy Wireless Networks

Fang-Chun Kuo (University of Goettingen, DE)
 Kun Tan (Microsoft Research Asia, CN)
 Xiang-Yang Li (Illinois Institute of Technology, US)
 Jiansong Zhang (Microsoft Research Asia, CN)
 Xiaoming Fu (University of Goettingen, DE)

Cooperative Network Coding and Coding-Aware Channel Assignment in Multi-Channel, Multi-Interface Wireless Networks

Seok-Chul Kwon (Georgia Institute of Technology, US)
Faramarz Hendessi (Georgia Institute of Technology, US /
Isfahan University, IR)
Faramarz Fekri (Georgia Institute of Technology, US)

Friday 26 June 2009, 15:30 - 17:00 • Rm: Sala Cavour 6-7 Applications

A Low-cost, Small-footprint Wireless Sensor for Container Integrity Monitoring

Venkatesh Sarangan, Jakkrit Kunthong, Xinwei Cai, Satish Bukkapatnam,
Ranga Komanduri, John Volakis (Ohio State University, US)

SewerSnort: In-situ Sewer Gas Monitoring using Drifting Sensors

Jihyoung Kim, Jungsoo Lim, Jonathan Friedman, Uichin Lee,
Mani Srivastava, Mario Gerla (University of California, Los Angeles, US)
Diego Rosso (UCI, US)

Distributed or Centralized Traffic Advisory Systems-The Application's Take

John Otto, Fabian Bustamante (Northwestern University, US)

Friday 26 June 2009, 15:30 - 17:00 • Rm: Sala Cavour 6-7 Challenged Networks II

LocalCom: A Community-based Epidemic Forwarding Scheme in Disruption-tolerant Networks

Feng Li, Jie Wu (Florida Atlantic University, US)

Network Connectivity of VANETs in Urban Areas

Wantanee Viriyasitavat, Ozan Tonguz (Carnegie Mellon University, US)
Fan Bai (General Motors, US)

Infocast: A New Paradigm for Collaborative Content Distribution from Roadside Units to Vehicular Networks

Mohsen Sardari (Georgia Institute of Technology, US)
Faramarz Hendessi (Georgia Institute of Technology, US /
Isfahan University, IR)
Faramarz Fekri (Georgia Institute of Technology, US)

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In keeping with its initial long-term strategy, Coronis Systems is now opening Wavenis specifications for industry-wide standardization. Purely as a wireless connectivity platform, Wavenis offers a powerful foundation for a wide range of application protocols wishing to extend their performance with truly ultra-low-power, long-range, reliability, robustness and coexistence features. www.coronis.com

The 7th Annual IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks



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- Modeling, Algorithms, and Performance Evaluation
- Measurements and Experimental Research
- Hardware and Software Platforms, Middleware
- New Architectures
- MAC, Network, Transport, Application Protocols and Cross-Layer Design
- Network Coding, MIMO, Cooperative Communications and Other Novel Techniques
- Cognitive Radios, Vehicular Networks, Underwater Networks, Urban Sensing, and other Emerging Areas
- Security, Survivability and Fault Tolerance

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