

**The 8th IEEE International Symposium
on
Network Computing
and Applications**

IEEE NCA09

9-11 July 2009

Hotel Marlowe
Cambridge, MA USA

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Technical Program

Paper presenters are indicated in bold.

Thursday, 9 July 2009

7:45 - 8:15
Serrano Foyer **Registration / Continental Breakfast**

8:15 - 8:30
Serrano A/B **Opening Remarks**

Best Paper Session

8:30 - 9:15
Serrano A/B *An Experimental Study of Diversity with Off-The-Shelf AntiVirus Engines*
Illir Gashi, Vladimir Stankovic (City University London, London UK), Corrado Leita (Symantec, Sophia Antipolis, France) and Olivier Thonnard (Royal Military Academy, EURECOM, Brussels, Belgium)

Session Chair
TBA

Peer-to-Peer Networks

QuoCast: A Resource-Aware Algorithm for Reliable Peer-to-Peer Multicast

Mouna Allani, Benoît Garbinato (University of Lausanne, Switzerland), Amirhossein Malekpour and Fernando Pedone (University of Lugano, Switzerland)

9:15 - 10:45
Serrano A/B *Seed Scheduling for Peer-to-Peer Networks*

Flavio Esposito, Ibrahim Matta (Boston University, MA, USA), Pietro Michiardi (Eurecom Institute, Sophia Antipolis, France) Nobuyuki Mitsutake (Boston University, MA, USA) and Damiano Carra (University of Verona, Verona, Italy)

Proximity-Aware Distributed Mutual Exclusion for Effective Peer-to-Peer Replica Management

Denvil Smith and **Nian-Feng Tzeng** (University of Louisiana at Lafayette, LA, USA)

Session Chair
TBA

10:45 - 11:00
Serrano Foyer **Break**

Overlay Networks

Streamline: An Architecture for Overlay Multicast

11:00 - 12:00
Serrano A/B **Amirhossein Malekpour**, Fernando Pedone (University of Lugano, Switzerland), Mouna Allani and Benoît Garbinato (University of Lausanne, Switzerland)

Towards Improved Overlay Simulation Using Realistic Topologies

Gert Pfeifer, **Ryan Spring** and Christof Fetzer (Dresden University of Technology, Germany)

Session Chair
TBA

12:00 - 13:00
Serrano Foyer **Lunch**

Keynote Session

13:00 - 14:00 *The European Research Council – a new element in EU research policy*
Prof. Michal Kleiber, (European Research Council, Member of the Scientific Council, EU, Brussels, Belgium)

Session Chair
TBA

14:00 - 15:30 Serrano A/B	<p>Processor Sharing, Job Allocation and Resource Selection <i>Analysis of Round-Robin Implementations of Processor Sharing, Including Overhead</i> Steve Thompson, Lester Lipsky (University of Connecticut, CT, USA), Sarah Tasneem (Eastern Connecticut State University, CT, USA) and Feng Zhang (University of Connecticut, CT, USA)</p> <p><i>Comparison of Price-based Static and Dynamic Job Allocation Schemes for Grid Computing Systems</i> Satish Penmatsa (Southern Arkansas University AR, USA) and Anthony Chronopoulos (University of Texas at San Antonio, TX, USA)</p> <p><i>A Rule based Co-operative Approach for Cell Selection in High Speed Cellular Networks</i> Joseph Gomes (Bowie State University, MD, USA)</p>	Session Chair TBA	
15:30 - 16:30 Serrano A/B	<p>Distributed Dependable Storage <i>Sharing Private Information Across Distributed Databases</i> Michael Siegenthaler and Ken Birman (Cornell University, NY, USA)</p> <p><i>Energy-Aware Prefetching for Parallel Disk Systems: Algorithms, Models, and Evaluation</i> Adam Manzanares, Xiaojun Ruan, Shu Yin (Auburn University, AL, USA), Mais Nijim (University of Southern Mississippi, MO, USA), WeiLuo (China Ship Development and Design Center, Wuhan, Hubei, China) and Xiao Qin (Auburn University, AL, USA)</p>	Session Chair TBA	
16:30 - 16:45 Serrano Foyer	Break		
Parallel Sessions 16:45 - 17:45	Serrano A	<p>Biologically Inspired and Cognitive Approaches to Mission Survivability (BIOCOMS) Workshop <i>From Auto-adaptive to Survivable and Self-Regenerative Systems - Successes, Challenges, and Future</i> Michael Atighetchi and Partha Pal (BBN Technologies, Cambridge, MA, USA)</p> <p><i>Generic Danger Detection for Mission Continuity</i> Richard Ford, Attila Ondi, William Allen, Katherine Hoffman (Florida Institute of Technology, FL, USA) and Marco Carvalho (Institute for Machine and Human Cognition, FL, USA)</p> <p><i>Survivability Through Run-Time Software Evolution</i> Sharon Simmons and Dennis Edwards (University of West Florida, FL, USA)</p>	Session Chair TBA
		Serrano B	<p>Trustworthy Network Computing (TNC) Workshop <i>Automating Intrusion Response via Virtualization for Realizing Uninterruptible Web Services</i> Yih Huang and Anup K. Ghosh (George Mason University, VA, USA)</p> <p><i>Investigating the use of Topology Adaptation for Robust Multi-Path Transport: A Preliminary Study</i> Marco Arguedas, Carlos Perez, Marco Carvalho, Adrian Granados (Institute for Human and Machine Cognition, FL, USA), Kelli Hoback and Wayne Kraus (Rockwell Collins, IA, USA)</p> <p><i>Wireless Transmission Energy Analysis for Interference-Aware and Confidentiality-Enhanced Multipath Routing</i> Chung-wei Lee (University of Illinois at Springfield, IL, USA)</p>

Adaptive Cloud & Grid Computing (AGC) Workshop and Short Papers (Cloud Computing)

Session Chair
TBA

17:45 - 18:45
Serrano A

GliteVM: How Science and Business may benefit from Virtualization
Giuseppe Minutoli and Antonio Puliafito (University of Messina, Italy)

Customizing Network Functions for High Performance Cloud Computing
Takahiro Miyamoto, Michiaki Hayashi and Hideaki Tanaka (KDDI R&D Laboratories Inc., Optical Network Architecture Laboratory, Japan)

Volunteer Computing and Desktop Cloud: the Cloud@Home Paradigm
Vincenzo D. Cunsolo, Salvatore Distefano, Antonio Puliafito and **Marco Scarpa** (University of Messina, Italy)

18:45 – 19:00 **On your own**

19:00 – 20:00
Serrano A/B **Reception**

Friday, 10 July 2009

8:00 - 8:30
Serrano Foyer

Continental Breakfast

Network Security

Session Chair
TBA

A Collusion-Resistant Distributed Scalar Product Protocol With Application To Privacy-Preserving Computation of Trust

Carlos Aguilar Melchor, **Boussad Ait-Salem** and Philippe Gaborit (University of Limoges, France)

A Privacy Preserving Intrusion Tolerant Voting Architecture

8:30 - 10:30
Serrano A/B

Soontaree Tanaraksiritavorn and Shivakant Mishra (University of Colorado, CO, USA)

Detecting Botnets Using Command and Control Traffic

Basil AsSadhan, José M. F. Moura (Carnegie Mellon University, PA, USA), David Lapsley, Christine Jones and W. Timothy Strayer (BBN Technologies, MA, USA)

Evaluating Files to Audit for Detecting Intrusions in FileSystem Data

Jesus Molina (Fujitsu Laboratories of America, MD, USA) and Michel Cukier (University of Maryland, MD, USA)

10:30 - 11:00
Serrano Foyer

Break

Sensor Networks and Mobile Ad-Hoc Networks (MANETs)

Session Chair
TBA

A Case for Meta-Triggers in Wireless Sensor Networks

Goce Trajcevski, Nikolay Valtchanov, Oliviu Ghica and Peter Scheuermann (Northwestern University IL, USA)

11:00 - 12:30
Serrano A/B

Digital Investigation of Wormhole Attacks in Wireless Sensor Networks
Bayrem Triki, **Slim Rekhis** and Nouredine Boudriga (University of the 7th of November at Carthage, Tunisia)

TinyPairing: Computing Tate Pairing on Sensor Nodes with Higher Speed and Less Memory

Xiaokang Xiong, Duncan S. Wong and Xiaotie Deng (City University of Hong Kong, China)

12:30 - 13:30
Serrano Foyer **Lunch**

Best Paper Session

Session Chair
TBA

13:30 - 14:15
Serrano A/B

Simulating Fixed Virtual Nodes for Adapting Wireline Protocols to MANET

Jiang Wu, Nancy Griffeth (City University of New York, NY, USA), Nancy Lynch, Calvin Newport (Massachusetts Institute of Technology, MA, USA) and Ralph Droms (Cisco Systems, USA)

Keynote Session

Session Chair
TBA

14:15 - 15:15
Serrano A/B

Sustainability and the Office of CyberInfrastructure

Jennifer M. Schopf (Office of CyberInfrastructure, National Science Foundation (NSF), USA, and CyberInformatics Group, Woods Hole Oceanographic Institute)

15:15 - 15:30
Serrano Foyer

Break

Virtualization and Quality of Service

Session Chair
TBA

Maintaining Network QoS Across NIC Device Driver Failures Using Virtualization

Michael Le, Andrew Gallagher, Yuval Tamir (University of California at Los Angeles, CA, USA) and Yoshio Turner (HP Laboratories, CA, USA)

Improving Virtualized Windows Network Performance by Delegating Network Processing

15:30 - 17:30
Serrano A/B

Younggyun Koh, Calton Pu (Georgia Institute of Technology, GA, USA), Yasushi Shinjo, Hideki Eiraku, Go Saito and Daiyuu Nobori (University of Tsukuba, Tsukuba Ibaraki, Japan)

Introducing Virtual Execution Environments for Application Lifecycle Management and SLA-Driven Resource Distribution within Service Providers

Iñigo Goiri, Ferran Julia, Jorge Ejarque, Marc de Palol, Rosa Badia, Jordi Guitart and Jordi Torres (Barcelona Supercomputing Center, Barcelona, Spain)

Quality of Service Specifications: A Semantic Approach

Achilles Colombo Prudêncio, Roberto Willrich (Santa Catarina Federal University, Florianópolis, Brazil) Michel Diaz and **Said Tazi** (LAAS-CNRS and Toulouse University, Toulouse, France)

17:30 - 19:00 **On your own**

19:00 - 21:00
Serrano C

Banquet

Saturday, 11 July 2009

8:00 - 8:20
Serrano Foyer

Continental Breakfast

Wireless and Mobile Ad-hoc Networks (MANETs)

Session Chair
TBA

Estimating the Impact of Mobility Models' Parameters on Mobility Metrics in MANETs

Elmano Cavalcanti and Marco Spohn (Federal University of Campina Grande, Campina Grande, PB, Brazil)

Performance Evaluation of Concurrent Multipath Transfer using SCTP Multihoming in Multihop Wireless Networks

8:20 - 10:20
Serrano A/B

Ilknur Aydin and Chien-Chung Shen (University of Delaware, DE, USA)

Unequal Error Protection (UEP) for Wavelet-Based Wireless 3D Mesh Transmission

Fan Wu (Tuskegee University, AL, USA), Emmanuel Agu, Clifford Lindsay and **Chung-han Chen**

Introducing Probability in RFID Reader-to-Reader Anti-collision

Filippo Gandino, Renato Ferrero, Bartolomeo Montrucchio and Maurizio Rebaudengo (Politecnico di Torino, Torino, Italy)

10:20 - 10:40
Serrano Foyer

Break

Short Papers 1 – Security

Session Chair
TBA

Empirical Study of Tolerating Denial-of-Service Attacks with the Fosel Architecture

Hakem Beitollahi and Geert Deconinck (Katholieke Universiteit Leuven, Leuven, Belgium) Presented by **Hassan Salmani** (Connecticut University)

10:40 - 12:00
Serrano A/B

TTM Based Security Enhancement for Inter-domain Routing Protocol
Peidong Zhu, Xiangjiang Hu and Xiaoqiang Wang (National University of Defense Technology, Hunan, China)

Attribute-based Prevention of Phishing Attacks

Michael Atighetchi and Partha Pal (BBN Technologies, Cambridge, USA)

FIRST: Forensic Internet Replay Sequencing Tool

Michael Kelly and Sean Geoghegan (University of Arkansas at Little Rock, AR USA)

12:00 - 13:00
Serrano C

Lunch

Short Papers 2 – Peer-to-peer and Data Transfer

Session Chair
TBA

Adaptive Network Coding for Heterogeneous Peer-to-peer Streaming Systems

13:00 - 14:20
Serrano A/B

Min Yang and **Yuanyuan Yang** (State University of New York, Stony Brook, NY, USA)

Small Coalitions: Lightweight Collaboration for Efficient P2P Downloads

Ghassan Karame (ETH Zürich, Zürich, Switzerland), Mario Cagalj (University of Split, Split, Croatia) and Srdjan Capkun (ETH Zürich, Zürich, Switzerland)
Presented by **Kasper Bonne Rasmussen** (ETH Zürich, Zürich, Switzerland)

(continued)

A Distributed Algorithm for Web Content Replication

Sharrukh Zaman and Daniel Grosu (Wayne State University, MI, USA)

A Novel Congestion Control Algorithm for High Performance Bulk Data Transfer

Yongmao Ren, Haina Tang, Jun Li and Hualin Qian (Graduate University of Chinese Academy of Sciences, Beijing, China)

14:20 - 14:40
Serrano Foyer

Break

Short Papers 3 – Wireless Networks

Session Chair
TBA

A Rapid Tag Identification Method with Two Slots in RFID Systems

Yong Hwan Kim, Sung Soo Kim and **Kwang Seon Ahn** (Kyungpook National University Daegu, Korea)

Serving Handing Over Stations within the Mobile IEEE 802.16 Mesh Mode Context

Neila Krichene and Nouredine Boudriga (University of Carthage, Tunisia)

Functional and Performance Analysis of CalRadio 1 platform

Riccardo Manfrin, **Andrea Zanella** and Michele Zorzi (University of Padova, Italy)

RL-based Queue Management for QoS Support in Multi-Channel Multi-Radio Mesh Networks

Yu Zhou, Mira Yun, Timothy Kim (The George Washington University, Washington, DC, USA), Amrinder Arora (Bowie State University, Bowie, MD, USA) and Hyeong-Ah Choi (The George Washington University, Washington, DC, USA)

Short Papers 4 – Architectures and Protocols

Session Chair
TBA

A New Architecture for Optical Burst Switching Networks Based on Cooperative Control

Nuno Garcia (Universidade Lusófona de Humanidades e Tecnologias, Lisboa, Portugal and University of Beira Interior, Covilhã, Portugal), Mário Freire, Przemyslaw Lenkiewicz (University of Beira Interior, Covilhã, Portugal) and Paulo Monteiro (Universidade de Aveiro, Aveiro, Portugal and Nokia Siemens Networks Portugal S.A., Amadora, Portugal)

Optimizations of Large Receive Offload in Xen

Hitoshi Oi and Fumio Nakajima (The University of Aizu, Aizu Wakamatsu, Japan)

TTEthernet Dataflow Concept

Wilfried Steiner, Guenther Bauer (TTTech Computertechnik AG), Brendan Hall, Michael Paulitsch and Srivatsan Varadarajan (Honeywell)

Fast Macro Handover Scheme in Hierarchical IP networks

Sung-Hyun Nam, **Hyun-Woo Hwang**, Ju-Hyun Kim and Kyung-Geun Lee (Sejong University, Seoul, Korea)

Efficient Filtering Algorithm for Repeated Queries in DNS Log

Zheng Wang (China Internet Network Information Center, China; Chinese Academy of Sciences, China; and Graduate University of Chinese Academy of Sciences, China), Xiaodong Lee, Jian Jin (China Internet Network Information Center, China and Chinese Academy of Sciences, China) and Baoping Yan (Chinese Academy of Sciences, China)

Parallel Sessions
14:40 – 16:20

Serrano A

Serrano B

16:20 – 16:30
Serrano A

Closing Remarks

Thanks to all the volunteers who made NCA09 a success.

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