

**The 9th IEEE International Symposium
on
Network Computing
and Applications**

IEEE NCA10

15-17 July 2010

Hotel Marlowe
Cambridge, MA USA

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Technical Program

Paper presenters are indicated in bold.

Thursday, 15 July 2010

8:00 - 8:30 Serrano Foyer	Registration / Continental Breakfast	
8:30 - 9:00 Serrano A/B	Opening Remarks	
9:00 - 9:45 Serrano A/B	Best Student Paper <i>Six-shot Multicast – A Location-aware Strategy for Efficient Message Routing in MANETs</i> Benoit Garbinato (University of Lausanne), Adrian Holzer (Polytechnique de Montreal) and Francois Vessaz (University of Lausanne)	Session Chair Hans-Peter Schwefel
9:45 - 9:55 Serrano Foyer	Break	
9:55 - 11:25 Serrano A/B	Performance Optimizations <i>Improved Architectures for Range Encoding in Packet Classification System</i> Xin He (University of New South Wales), Jorgen Pedderson (University of New South Wales) and Sri Parameswaran (University of New South Wales) <i>AGGRO: Boosting STM Replication via Aggressively Optimistic Transaction Processing</i> Roberto Palmieri (DIS, Sapienza Rome University), Francesco Quaglia (DIS, Sapienza Rome University) and Paolo Romano (INESC-ID Lisbon) <i>Cost-based Optimization of Buffer Size in M/G/1/N Systems Under Different Service-time Distributions</i> Derek Doran (University of Connecticut), Lester Lipsky (University of Connecticut) and Steve Thompson (University of Connecticut)	Session Chair Edgar Nett
11:25 - 11:35 Serrano Foyer	Break	
11:35 - 12:05 Serrano A/B	Fault and Failure Management <i>Distributed Clustering Algorithms for Lossy Wireless Sensor Networks</i> Zhexi Pan (Stony Brook University), Yuanyuan Yang (Stony Brook University) and Dawei Gong (Stony Brook University)	Session Chair Erik Maehle
12:05 - 13:05 Serrano C	Lunch	
13:05 - 14:05 Serrano A/B	Fault and Failure Management (continued) <i>Modeling Fast Link Failure Detection for Dependable Wireless Mesh Networks</i> Timo Lindhorst (University of Magdeburg), Georg Lukas (University of Magdeburg), Edgar Nett (University of Magdeburg) <i>Fault-tolerant deadlock-free adaptive routing for any set of link and node failures in Multi-Cores systems</i> Fabien Chaix (TIMA), Dimiter Avresky (IRIANC), Nacer Edine Zergainoh (TIMA) and Mihail Nicolaidis (TIMA)	Session Chair Erik Maehle
14:05 - 14:15 Serrano Foyer	Break	

Cloud and Web Services

Session Chair

Katerina

Goseva-

Popstojanova

Detection of Performance Anomalies in Web-based Applications

João Magalhães (ESTGF, Porto Polytechnic) and Luis Silva (CISUC, University of Coimbra)

Ecosystem of Cloud Naming Systems: an Approach for the Management and Integration of Independent Cloud Name Spaces

14:15 - 16:15
Serrano A/B
Antonio Celesti (University of Messina), Massimo Villari (University of Messina) and Antonio Puliafito (University of Messina)

Colocation as a Service: Strategic and Operational Services for Cloud Colocation

Vatche Ishakian (Boston University), Raymond Sweha (Boston University), Jorge Londoño (Boston University) and Azer Bestavros (Boston University)

SOAP Web Services Compression using Variable and Fixed Length Coding

Dhiah Al-Shammary (RMIT University) and Ibrahim Khalil (RMIT University)

16:15 - 16:25
Serrano Foyer

Break

Short Papers I - Cloud Computing and Web Services

Session Chair

Lester Lipsky

Prediction of Job Resource Requirements for Deadline Schedulers to Manage High-Level SLAs on the Cloud

Gemma Reig (Universitat Politècnica de Catalunya), Javier Alonso (Universitat Politècnica de Catalunya) and Jordi Guitart (Universitat Politècnica de Catalunya)

Under the cloud: A Novel Content Addressable Data Framework For Cloud Parallelization to Create and Virtualize New Breeds of Cloud Applications

16:25 – 17:45
Serrano A/B
Amir Hossein Basirat (Clayton School of IT, Monash University), Anang Hudaya Mohammad Amin (Clayton School of IT, Monash University) and Asad I. Khan (Clayton School of IT, Monash University)

Dynamic Web Service Composition Middleware: A New Approach for QoS guarantees

Bruno T. Kuehne (University of São Paulo), Julio C. Estrella (University of São Paulo), Maycon L. M. Peixoto (University of São Paulo), Thiago C. Tavares (University of São Paulo), Regina H. C. Santana (University of São Paulo), Marcos J. Santana (University of São Paulo)

Multi-Level Multi-Server Task Assignment with Work-Conserving Migration

Malith Jayasinghe (RMIT University Australia), Zahir Tari (RMIT University Australia) and Panlop Zeepongsekul (RMIT University Australia)

Scientific Tour of Akamai Technologies, Inc.

Hosted By

Prof. Tom

Leighton

17:45 – 19:00
Akamai
Technologies,
Inc.

Prof. T. Leighton is a Professor at MIT and Chief Scientist of Akamai Technologies, Inc. Dr. Leighton is a Fellow of the American Academy of Arts and Sciences and the National Academy of Engineering.

Akamai Technologies, Inc. is the world leader of reliable content delivery via the Internet.

The tour will include a live demonstration of a reliable distributed network of tens of thousands of distributed servers in more than 60 countries.

Twenty (20) minute walk from the Hotel Marlowe

Friday, 16 July 2010

8:00 - 8:30
Serrano Foyer

Continental Breakfast

Security

Session Chair

Authentication using Virtual Certificate Authorities: A new Security Paradigm for Wireless Sensor Networks

D. R. Avresky

Edmond Holohan (National University of Ireland, Galway) and Michael Schukat (National University of Ireland, Galway)

8:30 - 10:00
Serrano A/B

GROK: A Practical System for Securing Group Communications

Joseph A. Cooley (MIT Lincoln Laboratory), Roger I. Khazan (MIT Lincoln Laboratory), Benjamin W. Fuller (MIT Lincoln Laboratory) and Galen E. Pickard (MIT Lincoln Laboratory)

Quantification of Attackers Activities on Servers running Web 2.0 Applications

Katerina Goseva-Popstojanova (West Virginia University), Risto Pantev (West Virginia University), Ana Dimitrijevikj (West Virginia University), and Brandon Miller (West Virginia University)

10:00 - 10:15
Serrano Foyer

Break

Best Paper

Session Chair

10:15 - 11:00
Serrano A/B

ASE: Authenticated Statement Exchange

Hans-Peter

Benjamin W. Fuller (MIT Lincoln Laboratory), Roger I. Khazan (MIT Lincoln Laboratory), Joseph A. Cooley (MIT Lincoln Laboratory), Galen E. Pickard (MIT Lincoln Laboratory) and Daniil Utin (MIT Lincoln Laboratory)

Schwefel

Performance Modeling and Assessment

Session Chair

11:00 - 12:00
Serrano A/B

Design of an Extensible Network Testbed

Erik Maehle

Charlie Wiseman (Washington University, St. Louis), Jyoti Parwatikar (Washington University, St. Louis), Ken Wong (Washington University, St. Louis), John DeHart (Washington University, St. Louis), and Jonathan Turner (Washington University, St. Louis)

A Performance Model of Gossip-Based Update Propagation

Imad Antonios (Southern Connecticut State University), Feng Zhang (University of Connecticut), Reetu Dhar (Southern Connecticut State University) and Lester Lipsky (University of Connecticut)

12:00 - 13:00
Serrano C

Lunch

Performance Modeling and Assessment (continued)

Session Chair

13:00 - 13:30
Serrano A/B

Assessing the Impact of a Realistic Radio Propagation Model on VANET Scenarios using Real Maps

Erik Maehle

Francisco J. Martinez (University of Zaragoza), Manuel Fogue (University of Zaragoza), Manuel Coll (University of Zaragoza), **Juan-Carlos Cano** (Technical University of Valencia), Carlos T. Calafate (Technical University of Valencia) and Pietro Manzoni (Technical University of Valencia)

13:30 - 13:45
Serrano Foyer

Break

Algorithms

Session Chair

Mark Tuttle

13:45 – 14:45
Serrano A/B

Time-Free Authenticated Byzantine Consensus

Hamouma Moumen (University of Béjaia) and **Achour Mostefaoui** (University of Rennes)

Improving Conjunctive Query Routing in Unstructured P2P Networks

Wai Gen Yee (Illinois Institute of Technology), Linh Nguyen (Illinois Institute of Technology) and Ophir Frieder (Georgetown University)

14:45 - 15:15
Serrano Foyer

Break

Short Papers II - Security

Session Chair

Mark Tuttle

15:15 - 16:35
Serrano A/B

Understanding the Vulnerabilities of a SOA Platform

Andrew Gronosky (Raytheon BBN Technologies), Michael Atighetchi (Raytheon BBN Technologies) and Partha Pal (Raytheon BBN Technologies)

A Network Based Approach to Malware Detection in Large IT Infrastructures

Brijesh Kumar (Drexel University) and **Constantine Katsinis** (Drexel University)

On the Integrity of Network Coding-based Anonymous P2P File Sharing Networks

Paolo Gasti (DISI – Università di Genova), Alessio Merlo (CNR-IEIIT), Giuseppe Ciaccio (DISI – Università di Genova) and Giovanni Chiola (DISI – Università di Genova)

PwdIP-Hash: A Lightweight Solution to Phishing and Pharming Attacks

Baber Aslam (University of Central Florida), Lei Wu (University of Central Florida) and Cliff C. Zou (University of Central Florida)

16:35 - 18:00

On your own

18:00 – 19:00
Serrano Foyer

Cocktails & Hors d'Oeuvres

19:00 – 21:00
Serrano C

Banquet Dinner

Saturday, 17 July 2010

8:00 - 9:00
Serrano Foyer

Continental Breakfast

Short Papers III - Wireless Sensor Networks and Mobile Ad-hoc Networks Session Chair Rasmus Olsen

Anomaly Detection with Wireless Sensor Networks

Nathalie Dessart (Université des Antilles et de la Guyane), Hacène Fouchal (CReSTIC, Université de Reims Champagne-Ardenne), Philippe Hunel (Université des Antilles et de la Guyane) and Nicolas Vidot (Université des Antilles et de la Guyane)

9:00 - 10:20
Serrano A/B

Performance Analysis of Optimal Packet Size for Congestion Control in Wireless Sensor Networks

Naimah Yaakob (RMIT University), Ibrahim Khalil (RMIT University) and Jiankun Hu (RMIT University)

QoS-Enabled Video Streaming in Wireless Sensor Networks

Song Guo (Boston University) and Thomas D. C. Little (Boston University)

A Decentralized Dynamic Sensor Activation Protocol for Chemical Sensor Networks

Shanika Karunasekera (University of Melbourne), Alex Skvortsov (Defence Science and Technology Organisation), Ajith Gunatilaka (Defence Science and Technology Organisation) and Champake Mendis (University of Melbourne)

10:20 - 10:50
Serrano Foyer

Break

Short Papers IV - Fault-Tolerance Session Chair D. R. Avresky

Partition Participant Detector with Dynamic Paths in Mobile Networks

Luciana Arantes (University of Paris), Pierre Sens (University of Paris), Gaël Thomas (University of Paris), Denis Conan (Télécom Sud Paris) and Léon Lim (Télécom Sud Paris)

10:50 - 11:50
Serrano A/B

Improving Robustness of Network Fault Diagnosis to Uncertainty in Observations

Jesper Grønbæk (Aalborg University), Hans-Peter Schwefel (FTW), Andrea Ceccarelli (University of Florence) and Andrea Bondavalli (University of Florence)

A Multi-Core Approach to Providing Fault Tolerance for Non-Deterministic Services

Balazs Gerofi (The University of Tokyo) and Yutaka Ishikawa (The University of Tokyo)

Short Papers V - Applications Session Chair Sean Geoghegan

NetOdyssey—A New Tool for Real-Time Analysis of Network Traffic

11:50 - 12:30
Serrano A/B

Fábio D. Beirão (University of Beira Interior), João V. Gomes (University of Beira Interior), Pedro R. M. Inácio (University of Beira Interior), Manuela Pereira (University of Beira Interior) and Mário M. Freire (University of Beira Interior)

Location Awareness Rescue System: Support for Mountain Rescue Teams

Panagiotis Georgopoulos (Lancaster University), Ben McCarthy (Lancaster University) and Christopher Edwards (Lancaster University)

12:30 - 13:30
Serrano C

Lunch

Short Papers VI - Overlay Networks and Routing

Session Chair
Rasmus Olsen

K-overlay: A Kautz Tree Structure for Video on Demand

Ubaid Abbasi (CNRS-LaBRI) and Toufik Ahmed (CNRS-LaBRI)

Dynamic Game-Play Arbitrators with 3D Voronoi Diagrams

Mahathir Almashor (RMIT University), Ibrahim Khalil (RMIT University) and Geoff Leach (RMIT University)

Pareto-based Optimization of Multicast Flows with QoS and Traffic Engineering Requirements

13:30 - 15:10
Serrano A/B

Marcos Luiz de Paula Bueno (Federal University of Uberlandia) and **Gina Maira Barbosa de Oliveira** (Federal University of Uberlandia)

Advanced Hashing with Hybrid Key Duplication for IP Address Lookup

Rujroj Tiengtavat (University of Texas at San Antonio) and Wei-Ming Lin (University of Texas at San Antonio)

Evaluation of a Hardware-Software Codesign Technique of Network Protocol Stacks

Taehoon Kim (Pusan National University) and Sungwoo Tak (Pusan National University)

15:10 - 15:40
Serrano Foyer

Break

Trustworthy Network Computing (TNC) Workshop

Session Chair
Erik Maehle

Redundancy Infrastructure for Service-oriented Wireless Sensor Networks

Jana Neumann (University of Luebeck), **Nils Hoeller** (University of Luebeck), Christoph Reinke (University of Luebeck) and Volker Linnemann (University of Luebeck)

15:40 - 16:40
Serrano A/B

Remote Reliable Services to Support Transactional Mobile Agents

Izabela Moise (Universite de Rennes, IRISA), Michel Hurfin (INRIA, Rennes - Bretagne Atlantique), Linda Zeghache (CERIST- Algiers) and Nadjib Badache (CERIST- Algiers)

A Geographic Unicast Routing Algorithm using no Location Service

Daniel Silvestre (INESC-ID) and Teresa Vazão (INESC-ID/IST)

16:40 - 16:50
Serrano A/B

Closing Remarks

Thanks to all the volunteers who made NCA10 a success.

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