2009 International Symposium on Performance Evaluation of Computer & Telecommunication Systems

(SPECTS 2009)

Istanbul, Turkey 13-16 July 2009



IEEE Catalog Number: ISBN:

CFP0974E-PRT 978-1-4244-4165-5

PAGE AUTHOR(S)

High performance computing: architectures and algorithms

A High Level Development, Modeling and Simulation Methodology for Complex Multicore Network Processors	5	Gianni Antichi, Christian Callegari, Massimo Coppola, Andrea Di Pietro, Domenico Ficara, Stefano Giordano, Massimiliano Meneghin, Massimo Torquati, Marco Vanneschi and Fabio Vitucci
An Extensible Infrastructure for Benchmarking Multi-Core Processors based Systems	13	M. Hasan Jamal, Ghulam Mustafa, Abdul Waheed and Waqar Mahmood
Architecture Level Design Space Exploration Of Superscalar Processor For Multimedia Applications	21	Abdur Rahman Maud, Shahid Masud and Rehan Ahmed
Rapid Software Power Estimation of Embedded Pipelined Processor through Instruction Level Power Models	27	Shakeel Sultan and Shahid Masud
Real-time systems and applications		
Framework for Performance Analysis of RTOS-Enabled Embedded Systems on FPGA	35	Ailia Gardezi, Muhammad Ahsan and Shahid Masud
Gang Scheduling in a Two-Cluster System with Critical Sporadic Jobs and Migrations	41	Zafeirios Papazachos and Helen Karatza
Earliest Starting and Finishing Time Duplication-Based Algorithm	49	Mahsa Hosseinzadeh and Hadi Shahriar Shahhosseini
Performance study of synthetic AER generation on CPUs for Real-Time Video based on Spikes	57	Manuel J. Domínguez- Morales, Pablo Iñigo-Blasco, Alejandro Linares-Barranco, Gabriel Jimenez, Anton Civit- Balcells and Jose L Sevillano
Applications and case studies I		
A Versatile Generator of Instruction Set Simulators and Disassemblers	65	Tahiry Ratsiambahotra, Hugues Cassé and Pascal Sainrat
Assessing the Impact of a Modeling Tool and its Support for Verification and Validation	73	Jonathan Gibss and Hessam Sarjoughian
Investigating Flash memory wear levelling and execution modes	81	Soraya Zertal and Peter Harrison
Speculative parallelization of multipath radiosity algorithm	89	Albert Trias, Joan Puiggalí, Francesc Castro, Teo Jove and Mateu Sbert

Applications and case studies II

PAGE AUTHOR(S)

Networking Technique for Synchronous e-Learning Platforms	96	Juan C. Granda, Daniel F. García, Pelayo Nuño and Francisco J. Suárez
Teaching and Training of Network Protocols with DEVS-Suite	104	Ahmet Zengin and Hessam Sarjoughian
Performance Analysis of Multi-Carrier RFID Systems	112	Hsin-Chin Liu and Jhen-Peng Ciou
Wireless networks I		
Energy Saving and Load Balancing in Wireless Ad Hoc Networks trough Ant-based Routing	117	Floriano De Rango and Mauro Tropea
Power Aware Decoding of a Scalable Video Bit-stream	125	Sahkeel Sultan, Fakhar Ahsan, Ahmed Majeed and Nadeem Khan
Optimal Packet Size Estimation Using Pseudo Gradient Search Based on 2-Additive Measures	131	Puttipong Mahasukhon, Hamid Sharif, Michael Hempel, Ting Zhou and Wei Wang
Expected Path Length for Angle and Distance-based Localized Routing	137	Israat Tanzeena Haque, Ioanis Nikolaidis and Pawel Gburzynski
Wireless networks II		
An Optimal Caching Technique in Wireless Ad hoc Network using Connected Dominating Set	142	Naveen Nahata, Namit Mishra, Tony Johri and Shashikala Tapaswi
Bandwidth Availability Aware Defragmentation based CAC for IEEE 802.16 Distributed Mesh Networks	146	Floriano De Rango and Andrea Malfitano
Formally Verified Authenticated Query Dissemination in Sensor Networks	154	Frank Werner and Zinaida Benenson
Map-Based Modeling and Design of Wireless Sensor Networks with OMNeT++	162	Piotr Szczytowski, Abdelmajid Khelil and Neeraj Suri
Wireless networks III		
Interference-Aware Ad-hoc on Demand Distance Vector (IA- AODV) Protocol	170	Floriano De Rango, Fiore Veltri and Peppino Fazio
A New Sink Based Energy Efficient and Delay Sensitive MAC Protocol for Large scale WSNs	178	Samira Niafar and Hadishahriar Sahhoseini

PAGE AUTHOR(S)

	-	\ \
A Fuzzy Logic-Based Energy Efficient Packet Loss Preventative Routing Protocol	185	Sudip Misra, Mohammad Obaidat, Sanchita Sanchita Roy and Debashish Debashish Mohanta
Energy-Efficient OLSR Performance Evaluation Under Energy- Aware Metrics	193	Floriano De Rango and Marco Fotino
Wireless networks IV		
A Stochastic Model for Beaconless IEEE 802.15.4 MAC Operation	199	Mukul Goyal, Dawn Rohm, Hossein Hosseini, Kishor Trivedi, August Divjak and Yusuf Bashir
Performance Evaluation of Overlaid WCDMA and TDMA Systems	208	Maan A. S. Al-Adwany and Amin M. Abbosh
Understanding Directional Load Balancing using Per Call Measurement Data	213	Anuradha Vaidyanathan, Wilfred Wong, Mark Billinghurst and Harsha Sirisena
Al techniques		
Al techniques A Standard Expert System For Weapon Target Assignment Problem	221	Mehmet Alper SAHIN and Kemal Leblebicioglu
A Standard Expert System For Weapon Target Assignment	221 225	
A Standard Expert System For Weapon Target Assignment Problem An optimized algorithm for abstraction based routing in		Kemal Leblebicioglu
A Standard Expert System For Weapon Target Assignment Problem An optimized algorithm for abstraction based routing in connection oriented networks Developing Cognitive Radio Approach Based on Dynamic SNR	225	Kemal Leblebicioglu Ali Habiboghli
A Standard Expert System For Weapon Target Assignment Problem An optimized algorithm for abstraction based routing in connection oriented networks Developing Cognitive Radio Approach Based on Dynamic SNR to reduce Handoff Latency in Cellular Systems	225	Kemal Leblebicioglu Ali Habiboghli
A Standard Expert System For Weapon Target Assignment Problem An optimized algorithm for abstraction based routing in connection oriented networks Developing Cognitive Radio Approach Based on Dynamic SNR to reduce Handoff Latency in Cellular Systems Physical layer Equivalent Random Analysis of a Buffered Optical Switch with	225 231	Kemal Leblebicioglu Ali Habiboghli Jamal Raiyn Conor McArdle, Daniele
A Standard Expert System For Weapon Target Assignment Problem An optimized algorithm for abstraction based routing in connection oriented networks Developing Cognitive Radio Approach Based on Dynamic SNR to reduce Handoff Latency in Cellular Systems Physical layer Equivalent Random Analysis of a Buffered Optical Switch with General Interarrival Times Impairment-aware Based Routing and Wavelength Assignment	225 231 238	Kemal Leblebicioglu Ali Habiboghli Jamal Raiyn Conor McArdle, Daniele Tafani and Liam P. Barry Mariana Massimino Feres
A Standard Expert System For Weapon Target Assignment Problem An optimized algorithm for abstraction based routing in connection oriented networks Developing Cognitive Radio Approach Based on Dynamic SNR to reduce Handoff Latency in Cellular Systems Physical layer Equivalent Random Analysis of a Buffered Optical Switch with General Interarrival Times Impairment-aware Based Routing and Wavelength Assignment for All-Optical Networks	225 231 238	Kemal Leblebicioglu Ali Habiboghli Jamal Raiyn Conor McArdle, Daniele Tafani and Liam P. Barry Mariana Massimino Feres

Network security

Quality of service I

Design and Performance Evaluation of a Content Distribution Overlay Optimized for Streaming	28
Design and Performance Evaluation of Service Overlay Networks Topologies	29
Location-based Restoration Mechanism for Multi-Domain GMPLS Networks	30

Performance evaluation for multistage interconnection networks 311 servicing unicast and multicast traffic (by partial operation)

Quality of service II

The Effect of Router Buffer Size on R-Bias in High-Speed variants of TCP	319	Aun Haider, Akihiro Naka
Topology considerations for the performance enhancement of localized QoS routing algorithms	326	Abdulbaset Mohammad
Network Redesign through Clusters Consolidation	333	Sami Habib, Paulvanna Nayaki Marimuthu, and Nader Al-Awadi
Simulcast Transmission for Video Applications: Performance Evaluation with an Integrated Simulation Environment	339	Christos Bouras, Apostolo Gkamas and George

Traffic modeling and policing

An empirical Evaluation of Short-period Prediction Performance
--

On the Use of Compression Algorithms for the Classification of IP Flows

Reconstructing arrival processes to G/D/1 queuing systems and 361 tandem networks

PAGE AUTHOR(S)

- Christian Callegari, Michele 268 Pagano, Rosario G. Garroppo, Stefano Giordano and Franco Russo
- Romain Fontugne, Toshio 274 Hirotsu and Kensuke Fukuda
- Natasa Zivic and Obaidur 282 Rehman
- Luca Caviglione and 89 Cristiano Cervellera
- Davide Adami, Christian 96 Callegari, Stefano Giordano, Gianfranco Nencioni, and Michele Pagano
- Anna Manolova, Eusebi 04 Calle, Sarah Ruepp, Jose Marzo and Lars Dittmann
- John Garofalakis and **Eleftherios Stergiou**
- ao

- los Gkamas and George **Kioumourztis**
- Mohamed Faten Zhani, 347 Halima Elbiaze and Farouk Kamoun
- Davide Adami, Christian 355 Callegari, Stefano Giordano, Michele Pagano and Franco Russo
 - Stephan Heckmüller and Bernd. E. Wolfinger

Author Index