

2009 Eighth International Symposium on Parallel and Distributed Computing

(ISPDC 2009)

**Lisbon, Portugal
30 June - 4 July 2009**



IEEE Catalog Number: CFP09337-PRT
ISBN: 978-1-4244-4410-6

2009 Eighth International Symposium on Parallel and Distributed Computing

ISPDC 2009

Table of Contents

Message from the Chairs

Committee Lists

Scheduling

Dynamic Job Scheduling on Heterogeneous Clusters	3
<i>Jorge Manuel Gomes Barbosa and Belmiro Daniel Rodrigues Moreira</i>	
Throughput Optimization for Micro-factories Subject to Failures	11
<i>Anne Benoit, Alexandru Dobrila, Jean-Marc Nicod, and Laurent Philippe</i>	

Sensors and Wireless

Multi-hop Congestion Control Algorithm in Mobile Wireless Networks	21
<i>Sasan Sahraei and Dan Grigoras</i>	
A Dynamic Model for Fire Emergency Evacuation Based on Wireless Sensor	
Networks	29
<i>Tatiana Tabirca, Kenneth N. Brown, and Cormac J. Sreenan</i>	

System Tools

CPU Load Prediction Model for Distributed Computing	39
<i>K. Beghdad Bey, Farid Benhammadi, Aicha Mokhtari, and Zahia Guessoum</i>	
Connection Bundling with HTTP: Supporting Interactive Applications	
through Web Browsers	46
<i>Herbert Rosmanith and Jens Volkert</i>	
Event-Driven Configuration of a Neural Network CMP System over	
a Homogeneous Interconnect Fabric	54
<i>Muhammad Mukaram Khan, Javier Navaridas Palma, Alexander D. Rast, Xin Jin,</i>	
<i>Luis A. Plana, Mikel Luján, John Viv Woods, Jose Miguel-Alonso, and Steve B. Furber</i>	

Algorithms

Parallel Position Weight Matrices Algorithms	65
<i>Mathieu Giraud and Jean-Stéphane Varré</i>	
Coarse-Grained Loop Parallelization: Iteration Space Slicing vs Affine	
Transformations	73
<i>Anna Beletska, Włodzimierz Bielecki, Albert Cohen, Marek Palkowski, and Krzysztof Siedlecki</i>	

Concurrent Programming

On the Performance of Contention Managers for Complex Transactional	
Memory Benchmarks	83
<i>Mohammad Ansari, Christos Kotselidis, Mikel Luján, Chris Kirkham, and Ian Watson</i>	
Utilizing Model Checking for Automated Optimization Information Discovery	
in InDiGO	91
<i>Valeriy Kolesnikov and Gurdip Singh</i>	
Distributed Causal Model-Based Diagnosis Based on Interacting Behavioral	
Petri Nets	99
<i>Hammadi Bennoui, Allaoua Chaoui, and Kamel Barkaoui</i>	
Programming Abstractions and Toolchain for Dataflow Multithreading	
Architectures	107
<i>Kyriakos Stavrou, Demos Pavlou, Marios Nikolaides, Panayiotis Petrides, Paraskevas Evripidou, Pedro Trancoso, Zdravko Popovic, and Roberto Giorgi</i>	

Algorithms and Applications

SAEP: Secure and Accurate and Energy-Efficient Time Synchronization	
in Wireless Sensor Networks	117
<i>Kyeong Tae Kim and Myung Hee Son</i>	
Distributed Shared Memory for the Cell Broadband Engine (DSMCBE)	121
<i>Morten N. Larsen, Kenneth Skovhede, and Brian Vinter</i>	
A Fully Distributed Clustering Algorithm Based on Random Walks	125
<i>Alain Bui, Abdurusul Kudireti, and Devan Sohier</i>	
Towards the Robustness of Dynamic Loop Scheduling on Large-Scale	
Heterogeneous Distributed Systems	129
<i>Ioana Banicescu, Florina M. Ciorba, and Ricolindo L. Cariño</i>	

Applications

Distributed Software Platform for Automation and Control of General Anaesthesia	135
<i>Gesner Passos, Nuno Roma, Bertinho Andrade da Costa, Leonel Sousa, and Joao Miranda Lemos</i>	
Exploration of the Conjecture of Bateman Using Particle Swarm Optimisation and Grid Computing	143
<i>Miguel Cárdenas-Montes, Antonio Gómez-Iglesias, Miguel A. Vega-Rodríguez, and Enrique Morales-Ramos</i>	

Multi-cores

Understanding the Memory Behavior of Emerging Multi-core Workloads	153
<i>Junmin Lin, Yu Chen, Wenlong Li, Aamer Jaleel, and Zhizhong Tang</i>	
CaravelaMPI: Message Passing Interface for Parallel GPU-Based Applications	161
<i>Shinichi Yamagiwa and Leonel Sousa</i>	
Using Graphics Processors to Accelerate the Solution of Out-of-Core Linear Systems	169
<i>Mercedes Marqués, Gregorio Quintana-Ortí, Enrique S. Quintana-Ortí, and Robert van de Geijn</i>	

Middleware

Automating Three-Dimensional Reconstruction of Icosahedral Virus Structure with Condensed Graphs	179
<i>Chenqi Wang, Neil Cafferkey, and John P. Morrison</i>	
Using a RESTful Messaging and Registry System to Support a Range of Distributed Applications	187
<i>Mark Baker, Garry Smith, Matthew Grove, Rahim Lakhoo, Hugo Mills, and Carl Albing</i>	
Program Execution Control in a Multi CMP Module System with a Look-Ahead Configured Global Network	195
<i>Eryk Laskowski, Lukasz Masko, Marek Tudruj, and Miroslaw Thor</i>	

Distributed Computing

An Efficient Weak Mutual Exclusion Algorithm	205
<i>Paolo Romano and Luis Rodrigues</i>	
A Dependable Multi-agent System with Self-Diagnostic Function	213
<i>Keinosuke Matsumoto, Tomoaki Maruo, and Akifumi Tanimoto</i>	
A P2P Network of Space Containers for Efficient Management of Spatial-Temporal Data in Intelligent Transportation Scenarios	218
<i>Eva Kühn, Richard Mordinyi, Hannu-Daniel Goiss, Sandford Bessler, and Slobodanka Tomic</i>	

Admission Control for Distributed Complex Responsive Systems	226
--	-----

Luis Garcés-Erice

Systems and Tools

TCP-AuthN: TCP Inline Authentication to Enhance Network Security in Grid Environments	237
<i>Jan Wiebelitz, Christopher Kunz, Stefan Piger, and Christian Grimm</i>	
Monitoring of Complex Applications Execution in Distributed Dependable Systems	241
<i>Florin Pop, Alexandru Costan, Ciprian Dobre, Corina Stratan, and Valentin Cristea</i>	
A Concept for Grid Credential Lifecycle Management and Heuristic Credential Abuse Detection	245
<i>Christopher Kunz, Jan Wiebelitz, Stefan Piger, and Christian Grimm</i>	
Realistic Evaluation of Interconnection Networks Using Synthetic Traffic	249
<i>Javier Navaridas and Jose Miguel-Alonso</i>	
Hierarchical Composite Regular Parallel Architecture	253
<i>M. Manjunathaiah</i>	
Improving the Separation of Parallel Code in Skeletal Systems	257
<i>Diogo Telmo Neves and João Luís Sobral</i>	

Author Index