2010 Ninth International Symposium on Parallel and Distributed Computing

(ISPDC 2010)

Istanbul, Turkey
7 – 9 July 2010
Models and Algorithms

Optimizing the Reliability of Pipelined Applications under Throughput Constraints

Anne Benoit, Hinde Lilia Bouziane, and Yves Robert

Algorithm for Mapping Multilayer BP Networks onto the SpiNNaker Neuromorphic Hardware


Decomposition Based Algorithm for State Prediction in Large Scale Distributed Systems

Mihai Istin, Andreea Vișan, Florin Pop, and Valentin Cristea

Operational Semantics of the Marte Repetitive Structure Modeling Concepts for Data-Parallel Applications Design

Abdoulaye Gamatié, Vlad Rusu, and Éric Rutten

Interconnection Topologies

Butterfly Automorphisms and Edge Faults

Meghanad D. Wagh and Khadidja Bendjilali

Cost Performance Analysis in Multi-level Tree Networks

Kijeung Choi and Thomas G. Robertazzi
GPU Programming

Pretty Good Accuracy in Matrix Multiplication with GPUs ................................................................. 49
Matthew Badin, Lubomir Bic, Michael Dillencourt, and Alexandru Nicolau

Exploiting the Power of GPUs for Multi-gigabit Wireless Baseband Processing ................................................................. 56
Taskin Kocak and Nicholas Hinitt

NQueens on CUDA: Optimization Issues ........................................................................................................... 63
Frank Feinbube, Bernhard Rabe, Martin von Löwis, and Andreas Polze

Parallel Cycle Based Logic Simulation Using Graphics Processing Units ................................................................. 71
Alper Sen, Baris Aksanli, Murat Bozkurt, and Melih Mert

Parallel ID Shadow-Map Decompression on GPU .............................................................................................. 79
Engin Deniz Diktas and Ali Vahit Sahiner

Grids and P2P Systems

Realizing Optimization Opportunities for Distributed Applications in the Middleware Layer by Utilizing InDiGO Framework ................................................................. 85
Valeriy Kolesnikov

Practical Uniform Peer Sampling under Churn ........................................................................................................... 93
Roberto Baldoni, Marco Platania, Leonardo Querzoni, and Sirio Scipioni

Improving Grid Fault Tolerance by Means of Global Behavior Modeling ................................................................. 101
Jesús Montes, Alberto Sánchez, and María S. Pérez

Toward a Reliable Distributed Data Management System .............................................................................................. 109
Ismail Akturk, Xinqi Wang, and Tevfik Kosar

Multicores

Early Performance Evaluation of New Six-Core Intel® Xeon® 5600 Family Processors for HPC ................................................................. 117
Paweł Gepner, Michał F. Kowalik, David L. Fraser, and Kazimierz Waćkowski

Energy Minimization on Thread-Level Speculation in Multicore Systems ................................................................. 125
Peng Li and Song Guo

Resource-Aware Compiler Prefetching for Many-Cores .............................................................................................. 133
George C. Caragea, Alexandros Tzannes, Fuat Keceli, Rajeev Barua, and Uzi Vishkin

Networks and Distributed Systems

DSL-Lab: A Low-Power Lightweight Platform to Experiment on Domestic Broadband Internet ................................................................. 141
Gilles Fedak, Jean-Patrick Gelas, Thomas Herault, Victor Iniesta, Derrick Kondo, Laurent Lefèvre, Paul Malecot, Lucas Nussbaum, Ala Rezmerita, and Olivier Richard

Fast Neighbor Discovery with Lightweight Termination Detection in Heterogeneous Cognitive Radio Networks .............................................................................................. 149
Yanyan Zeng, Neeraj Mittal, S. Venkatesan, and R. Chandrasekaran
SKAIT: A Parameterized Key Assignment Scheme for Wireless Networks .................................................................157

   Ramon Novales, Neeraj Mittal, and Kamil Sarac

A Distributed Wakening Based Target Tracking Protocol for Wireless Sensor Networks ...............................................................165

   Aysegul Alaybeyoglu, Orhan Dagdeviren, Aylin Kantarci, and Kayhan Erciyes

Prediction of Distributed Systems State Based on Monitoring Data ..................................................................................173

   Adriana Draghici, Alexandru Costan, and Valentin Cristea

Scientific Computing

Performance Models for the Spike Banded Linear System Solver ..................................................................................181

   Murat Manguoglu, Faisal Saied, Ahmed Sameh, and Ananth Grama

Numerical Analysis of a Dual-Sediment Transport Model Applied to Lake Okeechobee, Florida ........................................189

   Stuart R. Clark, Wenjie Wei, and Xing Cai

Web Services and Multi-agent Systems

Decentralised and Adaptive Collaboration in Multi-agent Systems ..................................................................................195

   Emre Çakar and Christian Müller-Schloer

Application of the ESB Architecture for Distributed Monitoring of the SLA Requirements .............................................................................203

   Kornel Skałkowski, Jakub Sendor, Renata Słota, and Jacek Kitowski

A Method for Distributing Scheduling Heuristics Inside Service Oriented Environments Using a Nature-Inspired Approach  ..................................................................................211

   Marc E. Frîncu

Author Index ........................................................................................................................................................................219