# Table of Contents

Message from the Symposium Co-chairs.................................................................................................................. ix
Message from the Program Chairs .......................................................................................................................... x
Committees........................................................................................................................................................ xi
Reviewers........................................................................................................................................................... xiii
Organizers and Sponsors........................................................................................................................................... xiv
Plenary Talks......................................................................................................................................................... xv

---

## Part I: Parallel Computing

Semi-dynamic Scheduling of Parallel Tasks for Heterogeneous Clusters ................................................................. 1
*Jörg Dümmler, Thomas Rauber, and Gudula Rünger*

Mixed Shared-Distributed Hash Tables Approaches for Parallel State Space Construction ........................................... 9
*Rodrigo T. Saad, Silvano Dal Zilio, and Bernard Berthomieu*

The 2nd Generation Intel Core Processor. Architectural Features Supporting HPC .................................................. 17
*Paweł Gepner, Victor Gamayunov, and David L. Fraser*

Grid System Installation, Management and Monitoring Application ........................................................................ 25
*Cristian Magherusan-Stanciu, Agnes Sebestyen-Pal, Emil Cebuc, Gheorghe Sebestyen-Pal, and Vasile Dadałat*

Using Virtualization and Job Folding for Batch Scheduling ..................................................................................... 33
*Jean-Marc Nicod, Laurent Philippe, Veronika Rehn-Sonigo, and Lamiel Toch*

Adapting Active Objects to Multicore Architectures ............................................................................................... 41
*Ludovic Henrio, Fabrice Huet, Zsolt István, and Gheorghe Sebestyén*

Formal Refinement of BSP Programs with Early Cost Evaluation ........................................................................ 49
*Virginia Niculescu*
The Parallel Classification of Very Large Collections of Data on Multi-core Platforms ..........................................................57
   Dodut Aurora Andrada, Camelia Lemnaru, and Rodica Potolea
Parabilis: Speeding up Single-Threaded Applications by Extracting Fine-Grained Threads for Multi-core Execution ..........63
   Ademola Fawibe, Oghenekarho Okobiah, Oleg Garitselov, Krishna Kavi, Izuchukwu Nwachukwu, Mohana Asha Latha Dubasi, and Vinay R. Prabhu
Framework for Mapping Data Mining Applications on GPUs .................................................................71
   Ana Gainaru and Emil Slusanschi
Real-Time Image Rectification and Stereo Reconstruction System on the GPU ............................................79
   Cosmin D. Pantilie, Istvan Haller, Marius Drulea, and Sergiu Nedevschi
Enhancing the Functionality of a GridSim-Based Scheduler for Effective Use with Large-Scale Scientific Applications ........................................................................................................86
   Srishti Srivastava, Ioana Banicescu, Florina M. Ciorba, and Wolfgang E. Nagel
Parallel Saturation Based Model Checking ............................................................................................94
   András Vörös, Tamás Szabó, Attila Jámbor, Dániel Darvas, Ákos Horváth, and Tamás Bartha
Program Design Environment for Multicore Processor Systems with Program Execution Controlled by Global States Monitoring ..........................................................102
   Marek Tudruj, Janusz Borkowski, Łukasz Maśko, Adam Smyk, Damian Kopański, and Eryk Laskowski

Part II: Distributed Computing
Provisioning OpenCL Capable Infrastructure with Infiniband Verbs ..................................................110
   Christopher J. Reynolds, Zsolt Lichtenberger, and Stephen Winter
Performance Evaluation of Incremental Vector Clocks ...................................................................117
   Sangyoon Lee, Ajay D. Kshemkalyani, and Min Shen
Elite Leader Finding Algorithm for MANETs .....................................................................................125
   Awadhesh Kumar Singh and Shantanu Sharma
Beyond Traditional NLP: A Distributed Solution for Optimizing Chat Processing - Automatic Chat Assessment Using Tagged Latent Semantic Analysis ..........................................133
   Mihaí Dascălu, Ciprian Dobre, Ştefan Trăuşan-Matu, and Valentin Cristea
Task-Oriented Programming: A Suitable Programming Model for Multicore and Distributed Systems .............................................................................................................................139
   Saeed Shahrivari and Mohsen Sharifi
Augmented Mobile Devices through Cyber Foraging .......................................................................145
   Somayeh Kafaie, Omid Kashefi, and Mohsen Sharifi
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLive: The Gradient Overlay as a Market Maker for Mesh-Based P2P Live Streaming</td>
<td>153</td>
</tr>
<tr>
<td>Amir H. Payberah, Jim Dowling, and Seif Haridi</td>
<td></td>
</tr>
<tr>
<td>Energy Aware Dynamic Resource Consolidation Algorithm for Virtualized Service Centers Based on Reinforcement Learning</td>
<td>163</td>
</tr>
<tr>
<td>Tudor Cioara, Ionut Anghel, Ioan Salomie, Georgiana Copil, Daniel Moldovan, and Alexander Kipp</td>
<td></td>
</tr>
<tr>
<td>Particle Swarm Optimization for Clustering Semantic Web Services</td>
<td>170</td>
</tr>
<tr>
<td>Aliz Nagy, Ciprian Oprişa, Ioan Salomie, Cristina Bianca Pop, Viorica Rozina Chifu, and Mihaela Dinşoreanu</td>
<td></td>
</tr>
<tr>
<td>Scalable Chord-Based, Cluster-Enhanced Peer-to-Peer Architecture</td>
<td>178</td>
</tr>
<tr>
<td>Supporting Range Queries</td>
<td></td>
</tr>
<tr>
<td>Codruţ Grosu, Eliana-Dina Tîrşa, Ciprian Dobre, Valentin Cristea, and Mugurel Ionuţ Andreica</td>
<td></td>
</tr>
<tr>
<td>Mobile Objects Security Protocols</td>
<td>186</td>
</tr>
<tr>
<td>Simina Dorin and Eneia Nicolae Todoran</td>
<td></td>
</tr>
<tr>
<td>Mobile Objects and Modern Communication Abstractions: Design Issues and Denotational Semantics</td>
<td>191</td>
</tr>
<tr>
<td>Eneia Nicolae Todoran, Claudiu Adam, Mirel Bâlc, Radu Pop, Răzvan Radu, Dorin Simina, Emanuel Varga, and Dan Andrei Zaharia</td>
<td></td>
</tr>
<tr>
<td>A Web Services Selection Approach Based on Personalized QoS Prediction</td>
<td>199</td>
</tr>
<tr>
<td>Huan Liu, Farong Zhong, and Bang OuYang</td>
<td></td>
</tr>
<tr>
<td>Log Auditing for Trust Assessment in Peer-to-Peer Collaboration</td>
<td>207</td>
</tr>
<tr>
<td>Hien Thi Thu Truong and Claudia-Lavinia Ignat</td>
<td></td>
</tr>
<tr>
<td>D-OSyRIS: A Self-Healing Distributed Workflow Engine</td>
<td>215</td>
</tr>
<tr>
<td>Marc E. Frîncu</td>
<td></td>
</tr>
<tr>
<td>DeSCal - Decentralized Shared Calendar for P2P and Ad-Hoc Networks</td>
<td>223</td>
</tr>
<tr>
<td>Jagdish Prasad Achara, Abdessamad Imine, and Michael Rusinowitch</td>
<td></td>
</tr>
<tr>
<td>Decentralized Trust Management in Peer-to-Peer Systems</td>
<td>232</td>
</tr>
<tr>
<td>Andreea Vișan, Florin Pop, and Valentin Cristea</td>
<td></td>
</tr>
<tr>
<td>Hybrid Analytical-Simulation Model Used to Evaluate and Improve System Performance</td>
<td>240</td>
</tr>
<tr>
<td>Cosmina Chişe and Ioan Jurca</td>
<td></td>
</tr>
<tr>
<td>SIGMA - Semantic Government Mash-Up Application: Using Semantic Web Technologies to Provide Access to Governmental Data</td>
<td>247</td>
</tr>
<tr>
<td>Claudia Gheorghiu, Radu Nicolescu, Andrei Vasile Bogdan, Cristian Ochisor, Sabin C. Buraga, and Lenuta Alboaie</td>
<td></td>
</tr>
</tbody>
</table>
Part III: Short Papers

The Case for a Simplified Workflow Model in Federations of Universities ..............................................254
   Mihail Ionescu

Towards Fast Bioinformatics Algorithms: Benchmarking the GPGPU .....................................................258
   Andrei Alic, Simona Visan, and Rodica Potolea

Parallelization of High Dynamic Range Image Creation on Multi-core Processor Architectures ..........................................................262
   Vlad-Marian Spoiala, Emil Slusanschi, Monica Dagadita, and Cristian Bancu

Parallel Investigations of the Dynamics of Neural Microcircuits ...............................................................266
   Ioan Lucian Muntean, Marius Joldos, Ilina Raluca Ban, and Iulia Maria Morariu

Bio-inspired Parallel Computing Structures for High Reliability Servomotor Control Applications ..........................................................270
   V. Chindriș and Cs. Szász

A Tabu Search Optimization Approach for Semantic Web Service Composition ...........................................274
   Cristina Bianca Pop, Monica Vlad, Viorica Rozina Chifu, Ioan Salomie, and Mihaela Dinsoreanu

Solving NP-Complete Problems on the CUDA Architecture Using Genetic Algorithms ..........................................................278
   Mihai Calin Feier, Camelia Lemnaru, and Rodica Potolea

HIGA: Hybrid Immune - Genetic Algorithm for Dependent Task Scheduling in Large Scale Distributed Systems ..........................................................282
   Mihai Istin, Florin Pop, and Valentin Cristea

gSWAT Platform for Grid Based Hydrological Model Calibration and Execution ..........................................288
   Victor Bacu, Danut Mihon, Denisa Rodila, Teodor Stefanut, and Dorian Gorgan

Author Index ............................................................................................................................................292