Applications of Parallel and Distributed Computing

On Exploring a Virtual Agent Negotiation Inspired Approach for Route Guidance in Urban Traffic Networks ........................................ 3
   Wenbin Hu, Liping Yan, Huan Wang, and Bo Du

Optimization of Binomial Option Pricing on Intel MIC Heterogeneous System .................................................. 17
   Weihao Liang, Hong An, Feng Li, and Yichao Cheng

Stencil Computations on HPC-oriented ARMv8 64-Bit Multi-Core Processor .................................................. 30
   Chunjiang Li, Yushan Dong, and Kuan Li

A Particle Swarm Optimization Algorithm for Controller Placement Problem in Software Defined Network .................. 44
   Chuangen Gao, Hua Wang, Fangjin Zhu, Linbo Zhai, and Shanwen Yi

A Streaming Execution Method for Multi-services in Mobile Cloud Computing .................................................. 55
   Lei Li, Yonghua Xiong, Shufan Guo, Keyuan Jiang, and Yongbing Tang

Economy-Oriented Deadline Scheduling Policy for Render System Using IaaS Cloud ........................................ 68
   Qian Li, Weiguo Wu, Zeyu Sun, Lei Wang, and Jianhang Huang

Towards Detailed Tissue-Scale 3D Simulations of Electrical Activity and Calcium Handling in the Human Cardiac Ventricle 79
   Qiang Lan, Namit Gaur, Johannes Langguth, and Xing Cai

Task Parallel Implementation of Matrix Multiplication on Multi-socket Multi-core Architectures ........................................ 93
   Yizhuo Wang, Weixing Ji, Xu Chen, and Sensen Hu

Refactoring for Separation of Concurrent Concerns .................... 105
   Yang Zhang, Dongwen Zhang, Weixing Ji, and Yizhuo Wang

Exploiting Scalable Parallelism for Remote Sensing Analysis Models by Data Transformation Graph .................... 119
   Zhenchun Huang and Guoqing Li
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource-Efficient Vibration Data Collection in Cyber-Physical Systems</td>
<td>134</td>
</tr>
<tr>
<td>Md Zakirul Alam Bhuiyan, Guojun Wang, Jie Wu, Tian Wang, and Xiangyong Liu</td>
<td></td>
</tr>
<tr>
<td>A New Approach for Vehicle Recognition and Tracking in Multi-camera Traffic System</td>
<td>148</td>
</tr>
<tr>
<td>Wenbin Jiang, Zhiwei Lu, Hai Jin, and Ye Chi</td>
<td></td>
</tr>
<tr>
<td>DFIS: A Scalable Distributed Fingerprint Identification System</td>
<td>162</td>
</tr>
<tr>
<td>Yunxiang Zhao, Wanxin Zhang, Dongsheng Li, and Zhen Huang</td>
<td></td>
</tr>
<tr>
<td>Energy Saving and Load Balancing for SDN Based on Multi-objective Particle Swarm Optimization</td>
<td>176</td>
</tr>
<tr>
<td>Runshui Zhu, Hua Wang, Yanqing Gao, Shanwen Yi, and Fangjin Zhu</td>
<td></td>
</tr>
<tr>
<td>Pre-stack Kirchhoff Time Migration on Hadoop and Spark</td>
<td>190</td>
</tr>
<tr>
<td>Chen Yang, Jie Tang, Heng Gao, and Gangshan Wu</td>
<td></td>
</tr>
<tr>
<td>A Cyber Physical System with GPU for CNC Applications</td>
<td>203</td>
</tr>
<tr>
<td>Jen-Chieh Chang, Ting-Hsuan Chien, and Rong-Guey Chang</td>
<td></td>
</tr>
<tr>
<td>NCPSO: A Solution of the Controller Placement Problem in Software Defined Networks</td>
<td>213</td>
</tr>
<tr>
<td>Shuai Liu, Hua Wang, Shanwen Yi, and Fangjin Zhu</td>
<td></td>
</tr>
<tr>
<td>Parallel Column Subset Selection of Kernel Matrix for Scaling up Support Vector Machines</td>
<td>226</td>
</tr>
<tr>
<td>Jiangang Wu, Chang Feng, Peihuan Gao, and Shizhong Liao</td>
<td></td>
</tr>
<tr>
<td>Real-Time Deconvolution with GPU and Spark for Big Imaging Data Analysis</td>
<td>240</td>
</tr>
<tr>
<td>Lianyu Cao, Penghui Juan, and Yinghua Zhang</td>
<td></td>
</tr>
<tr>
<td>Parallel Kirchhoff Pre-Stack Depth Migration on Large High Performance Clusters</td>
<td>251</td>
</tr>
<tr>
<td>Chao Li, Yida Wang, Changhai Zhao, Haihua Yan, and Jianlei Zhang</td>
<td></td>
</tr>
<tr>
<td>MrBayes for Phylogenetic Inference Using Protein Data on a GPU Cluster</td>
<td>267</td>
</tr>
<tr>
<td>Shuai Pang, Rebecca J. Stones, Ming-ming Ren, Gang Wang, and Xiaoguang Liu</td>
<td></td>
</tr>
<tr>
<td>Paralleled Continuous Tabu Search Algorithm with Sine Maps and Staged Strategy for Solving CNOP</td>
<td>281</td>
</tr>
<tr>
<td>Shijin Yuan, Yiwen Qian, and Bin Mu</td>
<td></td>
</tr>
</tbody>
</table>
Service Dependability and Security in Distributed and Parallel Systems

VCLT: An Accurate Trajectory Tracking Attack Based on Crowdsourcing in VANETs.............................................................. 297
  Chi Lin, Kun Liu, Bo Xu, Jing Deng, Chang Wu Yu, and Guowei Wu

A Novel Search Engine-Based Method for Discovering Command and Control Server ...................................................... 311
  Xiaojun Guo, Guang Cheng, Wubin Pan, Truong Dinh Hu, and Yixin Liang

Leveraging Behavior Diversity to Detect Spammers in Online Social Networks ................................................................. 323
  Jian Cao, Qiang Fu, Qiang Li, and Dong Guo

A Proactive Fault Tolerance Scheme for Large Scale Storage Systems.................................................. 337
  Xinpu Ji, Yuxiang Ma, Rui Ma, Peng Li, Jingwei Ma, Gang Wang, Xiaoguang Liu, and Zhongwei Li

When Software Defined Networks Meet Fault Tolerance: A Survey ................................................................. 351
  Jue Chen, Jinbang Chen, Fei Xu, Min Yin, and Wei Zhang

A Novel Signature Generation Approach for Polymorphic Worms................................................................. 369
  Jie Wang and Xiaoxian He

Scalable Access Policy for Attribute Based Encryption in Cloud Storage.................................................. 383
  Jing Wang, Chuanhe Huang, and Jinhai Wang

Minimizing Resource Expenditure While Maximizing Destructiveness for Node Capture Attacks......................... 403
  Chi Lin, Guowei Wu, Xiaochen Lai, and Tie Qiu

Deviation-Based Location Switching Protocol for Trajectory Privacy Protection.................................................. 417
  Shaobo Zhang, Qin Liu, and Guojun Wang

Exploring Efficient and Robust Virtual Machine Introspection Techniques.................................................. 429
  Chonghua Wang, Xiaochun Yun, Zhiyu Hao, Lei Cui, Yandong Han, and Qingxin Zou

CRVad: Confidential Reasoning and Verification Towards Secure Routing in Ad Hoc Networks.................................................. 449
  Teng Li, Jianfeng Ma, and Cong Sun

NMHP: A Privacy Preserving Profile Matching Protocol in Multi-hop Proximity Mobile Social Networks.......................... 463
  Entao Luo, Qin Liu, and Guojun Wang
A New Data Replication Scheme for PVFS2 ........................................ 475
   Nianyuan Bao, Jie Tang, Xiaoyu Zhang, and Gangshan Wu

Efficient Private Matching Scheme for Friend Information Exchange .... 492
   Fang Qi and Wenbo Wang

A Real-time Android Malware Detection System Based on Network
Traffic Analysis ................................................................. 504
   Hongbo Han, Zhenxiang Chen, Qiben Yan, Lizhi Peng, and Lei Zhang

Sky: Opinion Dynamics Based Consensus for P2P Network
with Trust Relationships .................................................... 517
   Houwu Chen and Jiwu Shu

Adopting Multi-mode Access Control for Secure Data Sharing in Cloud ... 532
   Chunhua Li, Ronglei Wei, Zebang Wu, Ke Zhou, Cheng Lei, and Hao Jin

A Scheme to Manage Encrypted Data Storage with Deduplication in Cloud ... 547
   Zheng Yan, Wenxiu Ding, and Haiqi Zhu

HCBE: Achieving Fine-Grained Access Control in Cloud-Based
PHR Systems ................................................................. 562
   Xuhui Liu, Qin Liu, Tao Peng, and Jie Wu

Lightweight Virtual Machine Checkpoint and Rollback for Long-running
Applications ................................................................. 577
   Lei Cui, Zhiyu Hao, Lun Li, Haiqiang Fei, Zhenquan Ding, Bo Li,
   and Peng Liu

Fast and Scalable Regular Expressions Matching with Multi-Stride
Index NFA ............................................................................ 597
   Sheng Huo, Dafang Zhang, and Yanbiao Li

A Robust and Efficient Detection Model of DDoS Attack
for Cloud Services ............................................................. 611
   Jian Zhang, Ya-Wei Zhang, Jian-Biao He, and Ou Jin

Secure Bisimulation for Interactive Systems .................................. 625
   Guanjun Liu and Changjun Jiang

Privacy Preserving for Network Coding in Smart Grid ......................... 640
   Shiming He, Weini Zeng, and Kun Xie

Verifiable Dynamic Fuzzy Search Over Encrypted Data in Cloud
Computing ................................................................. 655
   Xiaoyu Zhu, Qin Liu, and Guojun Wang
A Secure and Fine-Grained Query Results Verification Scheme for Private
Search Over Encrypted Cloud Data ................................. 667
  Hui Yin, Zheng Qin, Jixin Zhang, Lu Ou, Qin Liu, Yupeng Hu,
  and Huigui Rong

PEM4RFID: Privacy Enhancement Model for RFID Systems .............. 682
  Guangquan Xu, Yuanyuan Ren, Bin Liu, Gaoxu Zhang, Xiaohong Li,
  and Zhiyong Feng

Improved WOW Adaptive Image Steganography Method .................... 695
  Xin Liao, Guoyong Chen, Qi Li, and Jun Liu

CloudS: A Multi-cloud Storage System with Multi-level Security ........ 703
  Lu Shen, Shifang Feng, Jinjin Sun, Zhongwei Li, Gang Wang,
  and Xiaoguang Liu

Crossing – A Highly Available Quorum Protocol for Arbitrary
Planar Topologies ......................................................... 717
  Robert Schadek and Oliver Theel

Note on Fast Bridge Fault Test Generation Based on Critical Area ........ 729
  Masayuki Arai, Shingo Inuyama, and Kazuhiko Iwasaki

Joint Redundancy and Inspection-Based Maintenance Optimization
for Series-Parallel System .................................................. 741
  Yuan Yao, Pan He, Zhihao Zheng, Chun Tan, and Yue Yuan

Addressing NoC Reliability Through an Efficient Fibonacci-Based
Crosstalk Avoidance Codec Design ...................................... 756
  Zahra Shirmohammadi and Seyed Ghassem Miremadi

A Programming Framework for Implementing Fault-Tolerant Mechanism
in IoT Applications ........................................................... 771
  Yung-Li Hu, Yuo-Yu Cho, Wei-Bing Su, David S.L. Wei, Yennun Huang,
  Jiann-Liang Chen, Ing-Yi Chen, and Sy-Yen Kuo

An Agent-Based Framework for Simulating and Analysing Attacks
on Cyber Physical Systems ............................................... 785
  Sridhar Adepu, Aditya Mathur, Jagadeesh Gunda, and Sasa Djokic

Author Index ................................................................. 799
Algorithms and Architectures for Parallel Processing
15th International Conference, ICA3PP 2015,
Zhangjiajie, China, November 18-20, 2015,
Proceedings, Part III
Wang, G.; Zomaya, A.Y.; Martinez Perez, G.; Li, K. (Eds.)
2015, LI, 807 p. 355 illus. in color., Softcover
ISBN: 978-3-319-27136-1