

Junjie Wu · Lian Li (Eds.)

# Advanced Computer Architecture

11th Conference, ACA 2016

Weihai, China, August 22–23, 2016

Proceedings

# Contents

An OS-level Data Distribution Method in DRAM-PCM Hybrid Memory . . . .	1
<i>Hongbin Zhang, Jie Fan, and Jiwu Shu</i>	
Coarse Granularity Data Migration Based Power Management Mechanism for 3D DRAM Cache . . . . .	15
<i>Litiao Qiu, Lei Wang, Hongguang Zhang, Zhenyu Zhao, and Qiang Dou</i>	
A Novel Hybrid Last Level Cache Based on Multi-retention STT-RAM Cells . . . . .	28
<i>Hongguang Zhang, Minxuan Zhang, Zhenyu Zhao, and Shuo Tian</i>	
Overcoming and Analyzing the Bottleneck of Interposer Network in 2.5D NoC Architecture . . . . .	40
<i>Chen Li, Zicong Wang, Lu Wang, Sheng Ma, and Yang Guo</i>	
Micro-architectural Features for Malware Detection . . . . .	48
<i>Huicheng Peng, Jizeng Wei, and Wei Guo</i>	
An Energy Efficient Algorithm for Virtual Machine Allocation in Cloud Datacenters. . . . .	61
<i>Ahmad Ali, Li Lu, Yanmin Zhu, and Jiadi Yu</i>	
Research on Virtual Machine Cluster Deployment Algorithm in Cloud Computing Platform . . . . .	73
<i>Zheng Yao, Wen-Sheng Tang, Sheng-Chun Wang, and Hui Peng</i>	
H-TDMS: A System for Traffic Big Data Management . . . . .	85
<i>Xingcheng Hua, Jierui Wang, Li Lei, Bin Zhou, Xiaolin Zhang, and Peng Liu</i>	
GLDA: Parallel Gibbs Sampling for Latent Dirichlet Allocation on GPU . . . .	97
<i>Pei Xue, Tao Li, Kezhao Zhao, Qiankun Dong, and Wenjing Ma</i>	
High Performance Stencil Computations for Intel® Xeon Phi™ Coprorocessor . . . . .	108
<i>Luxia Feng, Yushan Dong, Chunjiang Li, and Hao Jiang</i>	
RLDRPSO: An Efficient Heuristic Algorithm for Task Partitioning . . . . .	118
<i>Xiaofeng Qi, Xingming Zhang, and Kaijian Yuan</i>	
A Fine-Granular Programming Scheme for Irregular Scientific Applications . . .	130
<i>Haowei Huang, Liehui Jiang, Weiyu Dong, Rui Chang, Yifan Hou, and Michael Gerndt</i>	

Programmable Two-Particle Bosonic-Fermionic Quantum Simulation System . . . . .	142
<i>Yang Wang, Junjie Wu, Yuhua Tang, Huiquan Wang, and Dongyang Wang</i>	
An Introduction to All-Optical Quantum Controlled-NOT Gates . . . . .	157
<i>Hongjuan He, Junjie Wu, and Xuan Zhu</i>	
Performance Analysis of Sliding Window Network Coding in MANET . . . . .	174
<i>Baolin Sun, Chao Gui, Ying Song, Hua Chen, and Xiaoyan Zhu</i>	
A Model for Evaluating and Comparing Moving Target Defense Techniques Based on Generalized Stochastic Petri Net. . . . .	184
<i>Guilin Cai, Baosheng Wang, Yuebin Luo, and Wei Hu</i>	
Subway Timetable Adjusting Method Research of Bi-directional Trains Arriving at a Station Asynchronously . . . . .	198
<i>Dan Yan, Jianhua Mao, Xuefeng Liu, and Minglai Yang</i>	
<b>Author Index</b> . . . . .	211