

2008 13th Asia-Pacific Computer Systems Architecture Conference

**Hsinchu, Taiwan
4-6 August 2008**



IEEE Catalog Number:
ISBN 13:

CFP08ACP-PRT
978-1-4244-2682-9

Table of Contents

Concurrency Engineering	1
<i>Chris Jesshope and Alex Shafarenko</i>	
An ALU Cluster with Floating Point Unit for Media Streaming Architecture with Homogeneous Processor Cores	9
<i>Chia-Yi Liou and Herming Chiueh</i>	
A Hybrid Protocol for Cluster-based Wireless Sensor Networks	16
<i>Mei-Wen Huang, Hsu-Jung Liu and Wen-Shyong Hsieh</i>	
Hardware Transactional Memory System for Parallel Programming	21
<i>Wang Huayong, Hou Rui and Wang Kun</i>	
RAID10L: A High Performance RAID10 Storage Architecture Based on Logging Technique	28
<i>Bo Mao, Dan Feng, Suzhen Wu, Jianxi Chen, Lingfang Zeng and Lei Tian</i>	
Implementation of a Precision Time Protocol over Low Rate Wireless Personal Area Networks	36
<i>Hyuntae Cho, Sanghyun Son, and Yunju Baek</i>	
Resource Sharing Control in Simultaneous MultiThreading Microarchitectures	44
<i>Chen Liu and Jean-Luc Gaudiot</i>	
Performance Models for Cluster-Enabled OpenMP Implementations	52
<i>Jie Cai, Alistair P. Rendell, Peter E. Strazdins and H'sien Jin Wong</i>	
Designs of the Basic Block Reassembling Instruction Stream Buffer for X86 ISA	60
<i>Jih-Ching Chiu, Yu-Liang Chou, Ta-Li Yeh and Tseng-Kuei Lin</i>	
The Potential of Fine-Grained Value Prediction in Enhancing the Performance of Modern Parallel Machines	68
<i>Shaoshan Liu and Jean-Luc Gaudiot</i>	
A Collaborative Virtual Assembly System Based on Mobile Devices	76
<i>Xiaohui Liang, Zhiying He and Xiaoxiao Wu</i>	
Debugging of Assembly Library Functions without Target Debugging Tools	84
<i>Jin-Gu Kang, Seung-Won Yang, and Jong-Yeol Lee</i>	
UML-Based Hardware/Software Co-Design Platform for Dynamically Partially Reconfigurable Network Security Systems	92
<i>Chun-Hsian Huang and Pao-Ann Hsiung</i>	
FPGA-based Equivalent Simulation Technology (FEST) for Clustered Stream Architecture	100
<i>Yi He, Ju Ren, Qianming Yang, Mei Wen, Nan Wu and Chunyuan Zhang</i>	
Hamiltonian-Cycle-Based Multicasting on Wormhole-Routed Torus Networks	108
<i>Neng-Chung Wang and Yi-Ping Hung</i>	
A Novel Spatio-Temporal Adaptive Bus Encoding for Reducing Crosstalk Interferences with Trade-Offs Between Performance and Reliability	116
<i>Jih-Sheng Shen, Pao-Ann Hsiung and Kuei-Chung Chang</i>	
Early Load: Hiding Load Latency in Deep Pipeline Processor	124
<i>Shun-Chieh Chang, Walter Yuan-Hwa Li, Yuan-Jung Kuo, and Chung-Ping Chung</i>	
A Wire Delay Scalable Stream Processor Architecture	132
<i>Guang Xu, Hong An, Ming Cong, Fang Wang and Yongqing Ren</i>	
Saving Register-File Static Power by Monitoring Short-Lived Temporary-Values in ROB	140
<i>Wann-Yun Shieh and Hsin-Dar Chen</i>	
A Quiz-Based Trust Model with Optimized Resource Management in Grid	148
<i>P. Varalakshmi, S. Thamarai Selvi, K. Anitha Devi, C. Krithika and RM. Kundhavai</i>	
Semantic Data De-duplication for Archival Storage Systems	154
<i>Chuanyi LIU, , Dapeng JU, Yu GU, Youhui ZHANG, Dongsheng WANG and David H.C. Du</i>	
Computation Rotating for Data Reuse	163
<i>Guiming Wu, Jinhui Xu, Yong Dou and Miao Wang</i>	
Profile Guided Optimization for Dataflow Predication	170
<i>Li Wang, Hong An, Yongqing Ren and Yaobin Wang</i>	
LogSPoTM: a Scalable Thread Level Speculation Model Based on Transactional Memory	178
<i>Rui Guo, Hong An, Ruiling Dou, Ming Cong, Yaobin Wang and Qi Li</i>	
A Gather/Scatter Hardware Support for Efficient Fast Fourier Transform	186
<i>Anderson Kuei-An Ku, Jenny Yi-Chun Kuo and Jingling Xue</i>	
Quality Improvement of Sequential Steady-State Simulations for Telecommunication Networks	194
<i>Jong-Suk R. Lee and Hae-Duck J. Jeong</i>	
Fast Accurate Rendering	202
<i>Matthew Kuo, Sam Collinson, Michael Jager and John Morris</i>	

Mechanism for Return Stack and Branch History Corrections under Misprediction in Deep Pipeline Design	209
<i>Guan-Ying Chiu, Hui-Chin Yang, Walter Yuan-Hwa Li and Chung-Ping Chung</i>	
Portable Desktop Applications Based on User-Level Virtualization1	217
<i>Youhui Zhang, Xiaoling Wang, Hong Liang, Gelin Su, Dongsheng Wang</i>	
Divya: A Dataflow Programming Model and its Runtime Support in Java Virtual Machine*	223
<i>Yang Chen,, Bin Fan,, Lujie Zhong, and Chengyong Wu</i>	
A Partial Memory Protection Scheme for Higher Effective Yield of Embedded Memory for Video Data	231
<i>Kang Yi, Shih-Yang Cheng, Fadi Kurdahi, and Ahmed Eltawil</i>	
Dynamic Binary Code Translation for Data Prefetch Optimization	237
<i>Tomoaki Ukezono and Kiyofumi Tanaka</i>	
A Multiple Simple Regular Expression Matching Architecture and Coprocessor for Deep Packet Inspection	245
<i>Wei Zhang,, Yibo Xue , Dongsheng Wang and Tian Song</i>	
Parallelization of Spectral Clustering Algorithm on Multi-core Processors and GPGPU*	253
<i>Jing Zheng, Wenguang Chen, Yurong Chen, Yimin Zhang, Ying Zhao and Weimin Zheng</i>	
MediaMem: a Dynamically Adjustable Memory Subsystem for High- Bandwidth Required Multimedia SoC Systems	261
<i>Slo-Li Chu, Min-Jen Lo, and Hsiao-Wen Yang</i>	
Enhancing Robustness of an iSCSI-based File System in Wireless Networks	269
<i>Baekjae Sung, Sejin Park, Woojoong Lee and Chanik Park</i>	
Tandem Virtual Machine - An Efficient Execution Platform for GALS Language SystemJ	276
<i>Avinash Malik, Zoran Salcic and Partha S Roop</i>	
Improving Code Density of Embedded Software using a 2-level Dictionary Code Compression Architecture	284
<i>Mikael Collin and Mats Brorsson</i>	
On Energy-Efficient Semi-Asynchronous MAC Protocols for Multi-hop Ad-hoc Networks	292
<i>Xuquan Lin, Melody Moh and Teng-Sheng Moh</i>	
Analyzing the Impact of Data Prefetching on Chip MultiProcessors	300
<i>Naoto Fukumoto, Tomonobu Mihara, Koji Inoue and Kazuaki Murakami</i>	
A Study on Periodic Shutdown for Adaptive CMPs in Handheld Devices	308
<i>Mladen Nikitovic, Thomas De Schampheleire, and Mats Brorsson</i>	
Automatic Selection of GCC Optimization Options Using A Gene Weighted Genetic Algorithm	315
<i>San-Chih Lin, Chi-Kuang Chang and Nai-Wei Lin</i>	
An Anticipative Recursively-Adjusting Mechanism for Redundant Parallel File Transfer in Data Grids	323
<i>Chao-Tung Yang, Yao-Chun Chi,</i>	
Investigating Enhanced Route Optimization for Mobile IPv6	331
<i>Shilei Kuang, Robert Elz, and Sinchai Kamolphiwong</i>	
Pre-virtualization: soft layering for virtual machines	338
<i>Joshua LeVasseur, Volkmar Uhlig, Yaowei Yang, Matthew Chapman, Peter Chubb, Ben Leslie and Gernot Heiser</i>	
A New Approach for Cycle Embedding in Faulty Hypercubes	347
<i>Sun-Yuan Hsieh and Nai-Wen Chang</i>	
A Study of Integrating Digital Health Network with UPnP in an Elderly Nursing Home	351
<i>Yaw-Jen Lin, Mei-Ju Su, Heng-Shuen Chen and Chiou-I Lin</i>	
WAN Services Lookup Protocol	358
<i>Yung-Chung Ku and Shann-Chiuen Wu</i>	
Desktop search in the intranet with integrated desktop search engines	364
<i>Wei-Lun Huang, Tzao-Lin Lee and Chiao-Szu Liao</i>	
An integrated software processor with autofilling out web forms	368
<i>Ming-Jui Huang and Tzao-Lin Lee</i>	
Heterogeneous File Sharing by File-System Emulation	376
<i>Cherng-Ying Ing and Tzao-Lin Lee</i>	
DHCP Support for Secure Automatic Detection of Host Status	380
<i>Jenq-Haur Wang, Chun-Yi Tsai and Tzao-Lin Lee</i>	