Contents

Programming Models

Hierarchical Computation in the SPMD Programming Model ............... 3
   Amir Kamil and Katherine Yelick

Porting Applications with OpenMP Using Similarity Analysis ............. 20
   Wei Ding, Oscar Hernandez, Tony Curtis, and Barbara Chapman

Tasks

Task-Aware Optimization of Dynamic Fractional Permissions. .............. 39
   Christoph M. Angerer

Near Optimal Work-Stealing Tree Scheduler for Highly Irregular
Data-Parallel Workloads. ......................................................... 55
   Aleksandar Prokopec and Martin Odersky

OpenCL Task Partitioning in the Presence of GPU Contention .............. 87
   Dominik Grewe, Zheng Wang, and Michael F.P. O’Boyle

Heterogeneous Computing

Compiling a High-Level Directive-Based Programming Model for GPGPUs ... 105
   Xiaonan Tian, Rengan Xu, Yonghong Yan, Zhifeng Yun,
   Sunita Chandrasekaran, and Barbara Chapman

Separate Compilation in a Language-Integrated Heterogeneous Environment ... 121
   Mike Murphy, Jaydeep Marathe, Girish Bharambe, Sean Lee,
   and Vinod Grover

Parametric GPU Code Generation for Affine Loop Programs ............... 136
   Athanasios Konstantinidis, Paul H.J. Kelly, J. Ramanujam,
   and P. Sadayappan

Power

OSCAR Compiler Controlled Multicore Power Reduction
   on Android Platform ............................................................... 155
   Hideo Yamamoto, Tomohiro Hirano, Kohei Muto, Hiroki Mikami,
   Takashi Goto, Dominic Hillenbrand, Moriyuki Takamura,
   Keiji Kimura, and Hironori Kasahara
Folklore Confirmed: Compiling for Speed = Compiling for Energy  
Tomofumi Yuki and Sanjay Rajopadhye

Debugging

Effectively Recognize Ad hoc Synchronizations with Static Analysis  
Le Yin

AntSM: Efficient Debugging for Shared Memory Parallel Programs  
Jae-Woo Lee and Samuel P. Midkiff

DRIFT: Decoupled CompileR-Based Instruction-Level Fault-Tolerance  
Konstantina Mitropoulou, Vasileios Porpodas, and Marcelo Cintra

Algorithms

Optimizing the LU Factorization for Energy Efficiency on a Many-Core Architecture  
Elkin Garcia, Jaime Arteaga, Robert Pavel, and Guang R. Gao

An Input-Adaptive Algorithm for High Performance Sparse Fast Fourier Transform
Shuo Chen and Xiaoming Li

Caches

Aligned Scheduling: Cache-Efficient Instruction Scheduling for VLIW Processors  
Vasileios Porpodas and Marcelo Cintra

Compile Time Modeling of Off-Chip Memory Bandwidth for Parallel Loops
Munara Tolubaeva, Yonghong Yan, and Barbara Chapman

Compiler Optimizations for Non-contiguous Remote Data Movement
Timo Schneider, Robert Gerstenberger, and Torsten Hoefler

Transactional Memory

Combining Lock Inference with Lock-Based Software Transactional Memory
Stefan Kempf, Ronald Veldema, and Michael Philippsen

Speculative Execution of Parallel Programs with Precise Exception Semantics on GPUs
Akihiro Hayashi, Max Grossman, Jisheng Zhao, Jun Shirako, and Vivek Sarkar

Author Index

XXIV Contents
Languages and Compilers for Parallel Computing
26th International Workshop, LCPC 2013, San Jose, CA, USA, September 25--27, 2013. Revised Selected Papers
Caşcaval, C.; Montesinos, P. (Eds.)
2014, XXIV, 357 p. 160 illus., Softcover
ISBN: 978-3-319-09966-8