Ajay Panyala

Post Doctorate Research Associate
High Performance Computing Group
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Research Interests

Compiler optimizations and programming models for High Performance and Parallel Computing. Automatic parallelization, out-of-core algorithms, loop transformations, data layout, power/energy optimizations for modern HPC architectures.

Education

2007 - 2014 **Ph.D. Computer Science**, Louisiana State University, Baton Rouge, LA.
Advisors: Dr. Gerald Baumgartner, Dr. J. Ramanujam.

2003 - 2007 **B.Tech. Computer Science**, Jawaharlal Nehru Technological University, Hyderabad, India.

Professional Experience

Oct'14 - present **Post Doctorate Research Associate**, Pacific Northwest National Laboratory.
Jan'12 - May'12 **Research Intern**, Pacific Northwest National Laboratory.
May'11 - Aug'11 **Research Intern**, Oakridge National Laboratory.
Jan'08 - Aug'14 **Research Assistant**, Department of Computer Science, Louisiana State University.

Journal Publications

PARCO15 Daniel Chavarría-Miranda, Ajay Panyala, Wenjing Ma, Adrian Prantl, Sriram Krishnamoorthy. **Global Transformations for Legacy Parallel Applications via Structural Analysis and Rewriting.** Journal of Parallel Computing vol:43, pp:1-26, March 2015.

Conference Publications

CF15 Daniel Chavarría-Miranda, Ajay Panyala, Mahantesh Halappanavar, Joseph B. Manzano, Antonino Tumeo. **Optimizing Irregular Applications for Energy and Performance on the Tilera Many-core Architecture.** Proceedings of the 12th ACM International Conference on Computing Frontiers, May 2015.

ICPP12 Ajay Panyala, Daniel Chavarría-Miranda, Sriram Krishnamoorthy. **On the use of term rewriting for performance optimization of legacy HPC Applications.** International Conference on Parallel Processing, September 2012.

Workshop Publications

CPC13 A Panyala, P. Bhattacharya, G. Baumgartner, J. Ramanujam. **Model-Driven Search Based Loop Fusion Optimization for Handwritten Code.** Proceedings of the 17th Workshop on Compilers for Parallel Computing, Lyon, France, 3-5 July 2013, 6 pages.

Workshop Presentations

PMAA12 — A Panyala, P. Bhattacharya, G. Baumgartner, J. Ramanujam. **A Fusion-Based Optimization Framework for a Tensor Contraction Language.** 7th International Workshop on Parallel Matrix Algorithms and Applications, 28-30 June 2012, London, UK.

PP14 — A Panyala, P. Bhattacharya, G. Baumgartner, J. Ramanujam. **Optimizing Handwritten Tensor Contraction Code: Our Experience.** SIAM Conference on Parallel Processing for Scientific Computing, 18-21 February 2014, Portland, Oregon.

Technical Reports

ORNL12 — David E. Bernholdt, Benjamin A. Allan, Robert C. Armstrong, Daniel Chavarria-Miranda, Tamara L. Dahlgren, Wael R. Elwasif, Tom Epperly, Samantha S. Foley, Geoffrey C. Hulette, Sriram Krishnamoorthy, Adrian Prantl, Ajay Panyala, Matthew Sottile. **COMPOSE-HPC: A Transformational Approach to Exascale.** Technical Report ORNL/TM-2012/85, Oak Ridge National Laboratory, March 2012.

Professional Societies

2010 - present — **Member**, Association for Computing Machinery (ACM)