

## Fengguang Song

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### CONTACT INFORMATION

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### RESEARCH INTERESTS

High performance computing, heterogeneous CPU-GPU architectures, numerical linear algebra, automated performance analysis and optimization.

### EDUCATION

Ph.D. in Computer Science, University of Tennessee at Knoxville, 2009  
  
M.Sc. in Computer Science, University of British Columbia, 2002  
  
M.Eng. in Computer Science, Nanjing University of Aeronautics and Astronautics, 1999  
  
B.Sc. in Computer Science, Zhengzhou University, 1996

### PROFESSIONAL EXPERIENCE

Assistant Professor, Department of Computer Science, IUPUI, 2013-present  
  
Senior Researcher, Computer Science Lab, Samsung Research America, 2012-2013  
  
Post-doctoral Research Associate, Innovative Computing Laboratory, University of Tennessee, 2010-2012

### HONORS AND AWARDS

NSF Travel Award for IEEE CLUSTER Computing, 2009  
NSF Travel Award for International Conference on Parallel Processing, 2007  
International Graduate Scholarship, UBC, 2000, 2001, 2002  
Best of State Graduate Award, ZZU, 1996  
Tonglian Communication Company Fellowship, ZZU, 1994 (top 0.5%)  
First-class University Academic Scholarship, ZZU, 1992, 1993, 1994, 1995 (top 1%)

### SELECTED PUBLICATIONS

[UCC'13] Waddington, D., Colmenares, J., Kuang, J., **Song, F.**, "KV-Cache: A Scalable High-Performance Web-Object Cache for Manycore", The 6th ACM/IEEE International Conference on Utility and Cloud Computing, Dresden, Germany, December 2013 (Acceptance rate: 24%).

[ICS'12] **Song, F.**, Tomov, S., Dongarra, J., "Enabling and Scaling Matrix Computations on Heterogeneous Multi-Core and Multi-GPU Systems", The 26th ACM International Conference on Supercomputing, San Servolo Island, Venice, Italy, June 2012 (Acceptance rate: 22%).

[SPAA'12] **Song, F.** and Dongarra, J., "A Scalable Framework for Heterogeneous GPU-Based Clusters", The 24th ACM Symposium on Parallelism in Algorithms and Architectures, Pittsburgh, PA, June 2012 (Acceptance rate: 26%).

[LAWN] **Song, F.**, Tomov, S., Dongarra, J., "Efficient Support for Matrix Computations on Heterogeneous Multi-core and Multi-GPU Architectures", LAPACK Working Notes 250, Netlib Online, June 2011.

[SC'10] **Song, F.**, Ltaief, H., Hadri, B., Dongarra, J., "Scalable Tile Communication-Avoiding QR Factorization on Multicore Cluster Systems", ACM/IEEE Conference on Supercomputing, New Orleans, LA, November 2010 (Acceptance rate: 20%).

[SC'09] **Song, F.**, YarKhan, A., Dongarra, J., "Dynamic Task Scheduling for Linear Algebra Algorithms on Distributed-Memory Multicore Systems", ACM/IEEE Conference on Supercomputing, Portland, OR, November 2009 (Acceptance rate: 22%).

[CLUSTER'09] **Song, F.**, Moore, S., Dongarra, J., "Analytical Modeling and Optimization for Affinity Based Thread Scheduling on Multicore Systems", IEEE Cluster Computing 2009, New Orleans, LA, August 2009.

[ICCS'09] **Song, F.**, Dongarra, J., Moore S., "A Scalable Non-blocking Multicast Scheme for Distributed DAG Scheduling", The International Conference on Computational Science 2009, LNCS 5544, 195–204, Baton Rouge, LA, May 2009 (Acceptance rate: 29%).

[HPDC'07] **Song, F.**, Moore, S., Dongarra, J., "Feedback-Directed Thread Scheduling with Memory Considerations", Sixteenth IEEE International Symposium on High-Performance Distributed Computing, Monterey Bay, CA, June 2007 (Acceptance rate: 20%).

[ICPP'07] **Song, F.**, Moore, S., Dongarra, J., "L2 Cache Modeling for Scientific Applications on Chip Multi-Processors", The 2007 International Conference on Parallel Processing, Xi'an, China, September 2007 (Acceptance rate: 27%).

[PDCS'06] **Song, F.**, Dongarra, J., Moore, S., "Experiments with Strassen's Algorithm: from Sequential to Parallel", Parallel and Distributed Computing and Systems 2006, Dallas, Texas, November 2006.

[IWOMP'06] Hernandez, O., **Song, F.**, Chapman, B., Dongarra, J., Mohr, B., Moore, S., Wolf, F., "Performance Instrumentation and Compiler Optimizations for MPI/OpenMP Applications", International Workshop on OpenMP, LNCS 4315, 267–278, Reims, France, June 2006.

[ICPP'05] Bhatia, N., **Song, F.**, Wolf, F., Dongarra, J., Mohr, B., Moore, S., "Automatic Experimental Analysis of Communication Patterns in Virtual Topologies", The 2005 International Conference on Parallel Processing, Oslo, Norway, June 2005 (Acceptance rate: 28%).

[ICPP'04] **Song, F.**, Wolf, F., Bhatia, N., Dongarra, J., Moore, S., "An Algebra for Cross-Experiment Performance Analysis", The 2004 International Conference on Parallel Processing, Montreal, Quebec, Canada, August 2004.

[LCI'04] Mucci, P., Dongarra, J., Moore, S., **Song, F.**, Wolf, F., Kufrin, R., "Automating the Large-Scale Collection and Analysis of Performance Data on Linux Clusters", The 5th LCI International Conference on Linux Clusters, Austin, Texas, May 2004.

- SELECTED SERVICES
- Technical Program Committee for IPDPS 2014, SC'10, SC'12, SC'13, Euromicro PDP 2011-2013.
  - Journal Reviewer for TPDS, JPDC, PARCO, Super.
  - Conference Reviewer for CCGrid 2012, Euro-Par 2011, ICDCS 2011, ICPP 2009, ICA3PP 2010, ICCCN 2010.
  - Technology Committee for School of Science at IUPUI, 2013-present.