

SRIRAM KRISHNAMOORTHY

P.O. Box 999, MSIN: J4-30, Richland, WA – 99352

Ph: (509) 372-6963 **Fax:** (509) 375-4595**Email:** sriram@pnnl.gov **Homepage:** <http://hpc.pnl.gov/people/sriram>**Education**

- 2002–2008 The Ohio State University, Columbus, Ohio
Ph.D., Computer Science and Engineering
M.S., Computer Science and Engineering
- 1998–2002 Anna University, Chennai, India
B.E., Computer Science and Engineering

Appointments

- July 2014–present Team lead. Pacific Northwest National Lab, Richland, WA
- 2012–present Scientist V. Pacific Northwest National Lab, Richland, WA
- 2008–2011 Scientist IV. Pacific Northwest National Lab, Richland, WA
- 2012–present Adjunct Faculty. Washington State University, Pullman, WA

Research Interests

High-performance computing; Parallel programming models; Fault tolerance; Runtime systems; Loop transformations

Awards and Accomplishments

- 2014 Best paper finalist, Supercomputing (SC)
- 2014 Best student paper finalist, Supercomputing (SC)
- 2014 Best student paper award, IEEE Cluster
- 2013 U.S. Department of Energy (DOE) Early Career award
- 2013 Ronald L. Brodzinski Award for Early Career Exceptional Achievement award (PNNL)
- 2013 Senior member, Institute of Electrical and Electronics Engineers (IEEE)
- 2012 ASCR/ASC Exascale Operating Systems and Runtime (OS/R) Technical Council member
- 2012 ASCR/ASC Resilience Technical Council member
- 2008 Outstanding Researcher Award. Ohio State University (Computer Science and Engineering Department)
- 2007 SC'07 HPC Challenge Award – as part of IBM X10 team
- 2007 IBM PhD Fellowship
- 2007 Ohio State University Presidential Fellowship
- 2006 Travel award, Supercomputing conference (SC)
- 2004 Best paper award, International Parallel and Distributed Processing Symposium (IPDPS)
- 2003 Best paper award, International Conference on High Performance Computing (HiPC)
- 2003 Travel award, International Conference on Cluster Computing (CLUSTER)
- 2001 Travel award, International Conference on High Performance Computing (HiPC)
- 1998 Ranked 1st in state engineering admissions (Tamil Nadu, India–TNEA) among over 40,000 students
- 1998 State Scholarship (Tamil Nadu, India) for performance in 12th grade (not awarded due to income limits)
- 1996 National Scholarship (India) for performance in 10th grade (not awarded due to income limits)

Research Funding Grants

- **PI** : “Concrete ingredients for flexible programming abstractions on exascale systems”. Department of Energy (DOE) Early Career Research Program. \$2,500,000. Period: 2013 to 2017
- **Co-PI** (PI: Pete Beckman, Argonne National Lab): “Argo: an exascale operating system and runtime”. Department of Energy (DOE). \$1,020,000. Period: 2013 to 2016
- **PI** : “Effective representations and optimizations for recursive parallel programming systems”. Department of Energy (DOE) Lab Directed Research and Development (LDRD). \$100,000. Period: 10/01/2013 to 09/30/2014
- **PI** : “TASCEL: an execution model for task-based optimizations”. Department of Energy (DOE) Lab Directed Research and Development (LDRD). \$475,000. Period: 10/01/2011 to 09/30/2013
- **Co-PI** (PI: Ronald Minnich, Sandia National Lab): “A fault-oblivious extreme scale execution environment”. Department of Energy (DOE) X-Stack Software Research. \$480,000. Period: 10/01/2010 to 09/30/2013
- **PI** : “Scalable performance diagnostics for massively parallel computers”. Department of Energy (DOE) Lab Directed Research and Development (LDRD). \$675,000. Period: 10/01/2008 to 09/30/2011
- **PI** : “Scalable fault tolerance runtime technology for petascale – handling faults in global address space programming models”. Department of Energy (DOE) Forum to Address Scalable Technology for runtime and Operating Systems (FASTOS2). \$1,080,000. Period: 06/01/2008 to 05/30/2011

Time Allocation Grants

- **Co-Investigator** (PI: Karol Kowalski, Pacific Northwest National Lab): “Development of efficient implementations of accurate coupled cluster methodologies in NWChem for Nvidia GPU architecture”. OLCF Center for Accelerated Application Readiness. Early access to OLCF Summit. Period:
- **Co-PI** (PI: Ananth Kalyanaraman, Washington State University): “Scalable and accurate construction of large protein sequence homology graphs for environmental community data sets”. NERSC Energy Research Computing Allocations Process (ERCAP). 300,000 core hours on XT4. Period: 01/13/2015 to 01/11/2016
- **PI** : “Design and evaluation of runtime optimizations for task-parallel programs”. NERSC Energy Research Computing Allocations Process (ERCAP). 500,000 core hours on XT4. Period: 01/13/2015 to 01/11/2016
- **Co-PI** (PI: Ananth Kalyanaraman, Washington State University): “Scalable and accurate construction of large protein sequence homology graphs for environmental community data sets”. NERSC Energy Research Computing Allocations Process (ERCAP). 300,000 core hours on XT4. Period: 01/01/2014 to 12/31/2014
- **PI** : “Design and evaluation of runtime optimizations for task-parallel programs”. NERSC Energy Research Computing Allocations Process (ERCAP). 500,000 core hours on XT4. Period: 01/01/2014 to 12/31/2014
- **PI** : “Studying the impact of locality on work stealing computations”. Extreme Science and Engineering Discovery Environment (XSEDE) starter allocation. 30,000 service units (SUs) on Blacklight. Period: 08/03/2013 to 08/02/2014
- **Co-Investigator** (PI: Maya Gokhale, Lawrence Livermore National Lab): “Developing and testing applications and future operating systems for exascale machines”. Department of Energy (DOE) Innovative and Novel Computational Impact on Theory and Experiment (INCITE) program. 30 million CPU hours on ALCF Mira system; 20 million CPU hours on ALCF Intrepid system. Period: 01/01/2013 to 12/31/2013
- **PI** : “Fault-oblivious execution environment: development and evaluation”. NERSC Energy Research Computing Allocations Process (ERCAP). 1,000,000 core hours on XT4. Period: 01/01/2013 to 12/31/2013
- **Co-PI** (PI: Ananth Kalyanaraman, Washington State University): “Scalable and accurate construction of large protein sequence homology graphs for environmental community data sets”. NERSC Energy Research Computing Allocations Process (ERCAP). 300,000 core hours on XT4. Period: 01/01/2013 to 12/31/2013

- **Co-PI** (PI: Karol Kowalski, Pacific Northwest National Lab): “High-level studies of excited states in light harvesting systems and complex emergent phenomena”. ASCR Leadership Computing Challenge (ALCC). 5,000,000 core hours on OLCF Titan. Period: 01/01/2012 to 12/31/2012
- **PI**: “Fault-oblivious execution environment: development and evaluation”. NERSC Energy Research Computing Allocations Process (ERCAP). 500,000 core hours on XT4. Period: 01/01/2012 to 12/31/2012
- **Co-PI** (PI: Ronald Minnich, Sandia National Lab): “Developing and testing applications and future operating systems for exascale machines”. Department of Energy (DOE) Innovative and Novel Computational Impact on Theory and Experiment (INCITE) program. 10 million CPU hours of supercomputing time on ALCF Intrepid system. Period: 01/01/2012 to 12/31/2012
- **PI**: “Fault-oblivious execution environment: development and evaluation”. NERSC Energy Research Computing Allocations Process (ERCAP). 700,000 core hours on XT4 (initial allocation: 250,000 core hours). Period: 01/01/2011 to 12/31/2011

Meeting Reports

- M. Snir, R. W. Wisniewski, J. A. Abraham, S. V. Adve, S. Bagchi, P. Balaji, J. Belak, P. Bose, F. Cappello, B. Carlson, A. A. Chien, P. Coteus, N. A. Debardeleben, P. Diniz, C. Engelmann, M. Erez, S. Fazzari, A. Geist, R. Gupta, F. Johnson, S. Krishnamoorthy, S. Leyffer, D. Liberty, S. Mitra, T. Munson, R. Schreiber, J. Stearley, and E. V. Hensbergen, “Addressing Failures in Exascale Computing – ICiS Workshop Report”. Argonne Report ANL/MCS-TM-332, *April 2013*
- P. Beckman, R. Brightwell, B. de Supinski, M. Gokhale, S. Hofmeyr, S. Krishnamoorthy, M. Lang, B. Maccabe, J. Shalf, M. Snir, B. Harrod, T. Hoang, and S. Sachs. “Exascale Operating Systems and Runtime Software Report”. *December 2012*
- A. Geist, B. Lucas, M. Snir, S. Borkar, E. Roman, M. Elnozahy, B. Still, A. Chien, R. Clay, J. Wu, C. Engelmann, N. DeBardeleben, R. Ross, L. Kaplan, M. Schulz, M. Heroux, S. Krishnamoorthy, L. Nowell, A. Vishnu, and L. Talley. “U.S. Department of Energy (DOE) Fault Management Workshop Report”. *August 2012*

Journal Publications

- 1 **JPDC**: J. Daily, A. Kalyanaraman, S. Krishnamoorthy, and A. Vishnu. “A work stealing based approach for enabling scalable optimal sequence homology detection”. *Journal of Parallel and Distributed Computing vol:79-80, pp:132-142*, May 2015.
- 2 **ParCo15**: D. Miranda, A. Panyala, W. Ma, A. Prantl, and S. Krishnamoorthy. “Global transformations for legacy parallel applications via structural analysis and rewriting”. *Parallel Computing vol:43, pp:1-26*, March 2015.
- 3 **IJHPCA14**: M. Snir, R. Wisniewski, J. Abraham, S. Adve, S. Bagchi, P. Balaji, J. Belak, P. Bose, F. Cappello, B. Carlson, A. Chien, P. Coteus, N. Debardeleben, P. Diniz, C. Engelmann, M. Erez, S. Fazzari, A. Geist, R. Gupta, F. Johnson, S. Krishnamoorthy, S. Leyffer, D. Liberty, S. Mitra, T. Munson, R. Schreiber, J. Stearley, and E. Van Hensbergen. “Addressing failures in exascale computing”. *International Journal of High Performance Computing Applications vol:28(2), pp:127-171*, May 2014.
- 4 **IJPP13**: N. Ali, S. Krishnamoorthy, M. Halappanavar, and J. Daily. “Multi-fault tolerance for Cartesian data distributions”. *International Journal of Parallel Programming, Special Issue: Computing Frontiers, 2011 Best Papers vol:41(3), pp:469-493*, June 2013.
- 5 **ParCo13**: M. Hermanns, S. Krishnamoorthy, and F. Wolf. “A scalable infrastructure for the performance analysis of passive target synchronization”. *Parallel Computing vol:39(3), pp:132-145*, March 2013.
- 6 **JCTC13**: K. Bhaskaran-Nair, W. Ma, S. Krishnamoorthy, O. Villa, H. van Dam, E. Apra, and K. Kowalski. “Non-iterative multireference Coupled Cluster methods on heterogeneous CPU-GPU systems”. *Journal of Chemical Theory and Computation vol:9(4), pp:1949-1957*, March 2013.
- 7 **CC13**: W. Ma, S. Krishnamoorthy, O. Villa, and K. Kowalski. “Optimizing tensor contraction expressions for hybrid CPU-GPU execution”. *Cluster Computing Special Issue vol:16(1), pp:131-155*, March 2013.

- 8 **JPDC12**: Q. Lu, X. Gao, S. Krishnamoorthy, G. Baumgartner, J. Ramanujam, and P. Sadayappan. "Empirical performance model-driven data layout optimization and library call selection". *Journal of Parallel and Distributed Computing* vol:72(3), pp:338-352, March 2012.
- 9 **CCPE12**: J. Hammond, S. Krishnamoorthy, S. Shende, N. Romero, and A. Malony. "Performance characterization of global address space applications: a case study with NWChem". *Concurrency and Computation: Practice and Experience* vol:24(2), pp:135-154, February 2012.
- 10 **CPL11**: J. Brabec, S. Krishnamoorthy, H. van Dam, K. Kowalski, and J. Pittner. "Massively parallel implementation of the multi-reference Brillouin-Wigner CCSD method". *Chemical Physics Letters* vol:514(4-6), pp:347-351, October 2011.
- 11 **JCTC11**: K. Kowalski, R. Olson, S. Krishnamoorthy, V. Tipparaju, and E. Apra. "The role of many-body effects in describing low-lying excited states of π -conjugated chromophores: high-level equation-of-motion coupled-cluster studies of fused porphyrin systems". *Journal of Chemical Theory and Computation* vol:7(7) pp:2200-2208, May 2011.
- 12 **JCTC11**: W. Ma, S. Krishnamoorthy, O. Villa, and K. Kowalski. "GPU-based implementations of the non-iterative regularized-CCSD(T) corrections: applications to strongly correlated systems". *Journal of Chemical Theory and Computation* vol:7(5) pp:1316-1327, April 2011.
- 13 **JPC10**: K. Glaesemann, N. Govind, S. Krishnamoorthy, and K. Kowalski. "EOMCC, MRPT, and TDDFT studies of charge transfer processes in mixed-valence compounds: application to the Spiro molecule". *Journal of Physical Chemistry A* vol:114(33) pp:8764-8771, June 2010.
- 14 **JCP10**: K. Kowalski, S. Krishnamoorthy, O. Villa, and J. Hammond. "Active-space completely-renormalized equation-of-motion Coupled-Cluster formalism: excited-state studies of green fluorescent protein, free-base porphyrin, and oligoporphyrin dimer". *Journal of Chemical Physics* vol:132(154103), April 2010.
- 15 **TPDS09**: N. Vydyanathan, S. Krishnamoorthy, G. Sabin, U. Catalyurek, T. Kurc, P. Sadayappan, and J. Saltz. "An integrated approach to locality-conscious processor allocation and scheduling of mixed-parallel applications". *IEEE Transactions on Parallel Distributed Systems* vol:20(8) pp:1158-1172, August 2009.
- 16 **JPC09**: Q. Lu, A. Hartono, T. Henretty, S. Krishnamoorthy, H. Zhang, G. Baumgartner, D. Bernholdt, M. Nooijen, R. Pitzer, J. Ramanujam, and P. Sadayappan. "Performance optimization of tensor contraction expressions for many body methods in quantum chemistry". *The Journal of Physical Chemistry A* vol:113(45), pp:12715-12723, November 2009.
- 17 **CCPE07**: X. Gao, S. Krishnamoorthy, S. Sahoo, C. Lam, G. Baumgartner, J. Ramanujam, and P. Sadayappan. "Efficient search-space pruning for integrated fusion and tiling transformations". *Concurrency and Computation: Practice and Experience* vol:19(18) pp:2425-2443, December 2007.
- 18 **JSc06**: S. Krishnamoorthy, G. Baumgartner, C. Lam, J. Nieplocha, and P. Sadayappan. "Layout transformation support for the disk resident arrays framework". *Journal of Supercomputing* vol:36(2) pp:153-170, May 2006.
- 19 **JPDC06**: S. Krishnan, S. Krishnamoorthy, G. Baumgartner, C. Lam, J. Ramanujam, P. Sadayappan, and V. Choppella. "Efficient synthesis of out-of-core algorithms using a nonlinear optimization solver". *Journal of Parallel and Distributed Computing (IPDPS Special Issue)* vol:66(5) pp:659-673, May 2006.
- 20 **MolPhy06**: A. Auer, G. Baumgartner, D. Bernholdt, A. Bibireata, V. Choppella, D. Cociorva, X. Gao, R. Harrison, S. Krishnamoorthy, S. Krishnan, C. Lam, M. Nooijen, R. Pitzer, J. Ramanujam, P. Sadayappan, and A. Sibiryakov. "Automatic code generation for many-body electronic structure methods: the Tensor Contraction Engine". *Molecular Physics* vol:104(2), pp:211-228, August 2006.
- 21 **ProcIEEE**: G. Baumgartner, A. Auer, D. Bernholdt, A. Bibireata, V. Choppella, D. Cociorva, X. Gao, R. Harrison, S. Hirata, S. Krishnamoorthy, S. Krishnan, C. Lam, Q. Lu, M. Nooijen, R. Pitzer, J. Ramanujam, P. Sadayappan, and A. Sibiryakov. "Synthesis of high-performance parallel programs for a class of ab initio quantum chemistry models". *Proceedings of the IEEE (Special Issue on Program Generation, Optimization, and Adaptation)* vol:93(2) pp:276-292, February 2005.

- 22 **IJHPCN04**: S. Krishnamoorthy, G. Baumgartner, D. Cociorva, C. Lam, and P. Sadayappan. "Efficient parallel out-of-core matrix transposition". *International Journal of High Performance Computing and Networking* vol:2(2-4) pp:110-119, March 2004.

Refereed Conference Publications

- 23 **SC15**: S. Aga, S. Krishnamoorthy, S. Narayanasamy. "CilkSpec: Optimistic Concurrency for Cilk". *Supercomputing (SC)*, November 2015.
- 24 **PLDI15**: B. Ren, Y. Jo, S. Krishnamoorthy, K. Agrawal, and M. Kulkarni. "Efficient execution of recursive programs on commodity vector hardware". *ACM SIGPLAN Conference on Programming Language Design and Implementation*, June 2015.
- 25 **SC14**: S. Rajbhandari, A. Nikam, P. Lai, K. Stock, S. Krishnamoorthy, and P. Sadayappan. "Communication-optimal framework for contracting distributed tensors". *Supercomputing (SC)*, November 2014 (**Best Paper Finalist**).
- 26 **SC14**: M. Kurt, S. Krishnamoorthy, K. Agrawal, and G. Agrawal. "Fault-tolerant dynamic task graph scheduling". *Supercomputing (SC)*, November 2014 (**Best Student Paper Finalist**).
- 27 **SC14**: J. Lifflander, S. Krishnamoorthy, and L. Kale. "Optimizing data locality for fork/join programs using constrained work stealing". *Supercomputing (SC)*, November 2014.
- 28 **Cluster14**: J. Lifflander, E. Meneses, H. Menon, P. Miller, S. Krishnamoorthy, and L. Kale. "Scalable replay with partial-order dependencies for message-logging fault tolerance". *IEEE CLUSTER*, September 2014 (**Best Student Paper Award**).
- 29 **ICPP14**: S. Rajbhandari, A. Nikam, P. Lai, K. Stock, S. Krishnamoorthy, and P. Sadayappan. "CAST: contraction algorithm for symmetric tensors". *International Conference on Parallel Processing*, September 2014.
- 30 **PLDI14**: S. Tavarageri, S. Krishnamoorthy, and P. Sadayappan. "Compiler-assisted detection of transient memory errors". *ACM SIGPLAN Conference on Programming Language Design and Implementation*, June 2014.
- 31 **SC13**: P. Lai, K. Stock, S. Rajbhandari, S. Krishnamoorthy, and P. Sadayappan. "A framework for load balancing of tensor contraction expressions via dynamic task partitioning". *SC 2013*, November 2013.
- 32 **ICS13**: X. Huo, S. Krishnamoorthy, and G. Agrawal. "Efficient scheduling of recursive control flow on GPUs". *27th International Conference on Supercomputing*, June 2013.
- 33 **PLDI13**: J. Lifflander, S. Krishnamoorthy, and L. Kale. "Steal Tree: low-overhead tracing of work stealing schedulers". *ACM SIGPLAN Conference on Programming Language Design and Implementation*, June 2013.
- 34 **ICPP12**: A. Panyala, D. Chavarria, and S. Krishnamoorthy. "On the use of term rewriting for performance optimization of legacy HPC applications". *International Conference on Parallel Processing*, September 2012.
- 35 **ICS12**: W. Ma and S. Krishnamoorthy. "Data-driven fault tolerance for work stealing computations". *26th International Conference on Supercomputing*, June 2012.
- 36 **HPDC12**: J. Lifflander, S. Krishnamoorthy, and L. Kale. "Work stealing and persistence-based load balancers for iterative overdecomposed applications". *ACM Symposium on High-Performance Parallel and Distributed Computing*, June 2012.
- 37 **CF12**: W. Ma, S. Krishnamoorthy, and G. Agrawal. "Parameterized micro-benchmarking: an auto-tuning approach for complex applications". *ACM International Conference on Computing Frontiers*, May 2012.
- 38 **CCGrid12**: D. Chavarria, S. Krishnamoorthy, and A. Vishnu. "Global Futures: a multithreaded execution model for global arrays-based applications". *IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing*, May 2012.
- 39 **IPDPS12**: H. Arafat, J. Dinan, S. Krishnamoorthy, T. Windus, and P. Sadayappan. "Load balancing of Dynamical Nucleation Theory Monte Carlo simulations through resource sharing barriers". *IEEE International Parallel & Distributed Processing Symposium*, May 2012.

- 40 **IPDPS12**: J. Dinan, P. Balaji, J. Hammond, S. Krishnamoorthy, and V. Tipparaju. "Supporting the Global Arrays PGAS model using MPI one-sided communication". *IEEE International Parallel & Distributed Processing Symposium*, May 2012.
- 41 **PDCS11**: R. Knapp, K. Karavanic, S. Krishnamoorthy, and A. Marquez. "Power- and cooling-aware parallel performance diagnostics". *The 23rd IASTED International Conference on Parallel and Distributed Computing and Systems*, December 2011.
- 42 **SC11**: K. Kowalski, S. Krishnamoorthy, R. Olson, V. Tipparaju, and E. Apra. "Scalable implementations of accurate excited-state Coupled Cluster theories: application of high-level methods to porphyrin-based systems". *SC 2011*, November 2011.
- 43 **EuroMPI11**: J. Dinan, S. Krishnamoorthy, P. Balaji, J. Hammond, M. Krishnan, V. Tipparaju, and A. Vishnu. "Noncollective communicator creation in MPI". *Special Session on Improving MPI User And Developer Interaction, EuroMPI*, September 2011.
- 44 **EuroPar11**: N. Ali, S. Krishnamoorthy, N. Govind, K. Kowalski, and P. Sadayappan. "Application-specific fault tolerance via data access characterization". *Euro-Par*, August 2011.
- 45 **CF11**: N. Ali, S. Krishnamoorthy, M. Halappanavar, and J. Daily. "Tolerating correlated failures for generalized cartesian distributions via bipartite matching". *ACM International Conference on Computing Frontiers*, May 2011.
- 46 **CC11**: W. Ma, S. Krishnamoorthy, and G. Agrawal. "Practical loop transformations for tensor contraction expressions on multi-level memory hierarchies". *International Conference on Compiler Construction*, April 2011.
- 47 **PPoPP11**: V. Saraswat, P. Kambadur, S. Kodali, D. Grove, and S. Krishnamoorthy. "Lifeline-based global load balancing". *16th ACM SIGPLAN Annual Symposium on Principles and Practices of Parallel Programming*, February 2011.
- 48 **PDP11**: N. Ali, S. Krishnamoorthy, N. Govind, and B. Palmer. "A redundant communication approach to scalable fault tolerance in PGAS programming models". *19th Euromicro International Conference on Parallel, Distributed and Network-Based Computing*, February 2011.
- 49 **CLUSTER10**: W. Ma, S. Krishnamoorthy, O. Villa, and K. Kowalski. "Acceleration of streamed tensor contraction expressions on GPGPU-based clusters". *IEEE International Conference on Cluster Computing*, September 2010.
- 50 **IPDPS10**: L. Chen, O. Villa, S. Krishnamoorthy, and G. Gao. "Load balancing on single- and multi-GPU systems". *24th IEEE International Parallel & Distributed Processing Symposium*, April 2010.
- 51 **CCGrid10**: S. Krishnamoorthy and K. Agarwal. "Scalable communication trace compression". *The 10th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing*, May 2010.
- 52 **ISCAS10**: O. Villa, L. Chen, and S. Krishnamoorthy. "High performance molecular dynamic simulation on single and multi-GPU systems". *IEEE International Symposium on Circuits and Systems*, May-June 2010.
- 53 **SC09**: J. Dinan, B. Larkins, J. Nieplocha, P. Sadayappan, S. Krishnamoorthy, and J. Nieplocha. "Scalable work stealing". *Supercomputing*, November 2009.
- 54 **PACT09**: Q. Lu, C. Alias, U. Bondhugula, T. Henretty, S. Krishnamoorthy, J. Ramanujam, A. Rountev, P. Sadayappan, Y. Chen, H. Lin, and T. Ngai. "Data layout transformation for enhancing locality on NUCA chip multiprocessors". *18th International Symposium on Parallel Architectures and Compilation Techniques*, September 2009.
- 55 **ICS09**: A. Hartono, M. Baskaran, C. Bastoul, A. Cohen, S. Krishnamoorthy, B. Norris, J. Ramanujam, and P. Sadayappan. "Parametric multi-level tiling of imperfectly nested loops". *International Conference on Supercomputing*, June 2009.
- 56 **CF09**: O. Villa, S. Krishnamoorthy, J. Nieplocha, and D. Brown Jr. "Scalable transparent checkpoint-restart of global address space applications on virtual machines over Infiniband". *Conference on Computing Frontiers*, April 2009.

- 57 **SC08**: B. Larkins, J. Dinan, S. Krishnamoorthy, S. Parthasarathy, A. Rountev, and P. Sadayappan. "Global trees: a framework for linked data structures on distributed memory parallel systems". *Supercomputing*, November 2008.
- 58 **ICPP08**: G. Cong, S. Kodali, S. Krishnamoorthy, D. Lea, V. Saraswat, and T. Wen. "Solving large, irregular graph problems using adaptive work-stealing". *International Conference on Parallel Processing*, September 2008.
- 59 **ICPP08**: J. Dinan, S. Krishnamoorthy, B. Larkins, J. Nieplocha, and P. Sadayappan. "Scioto: a framework for global-view task parallelism". *International Conference on Parallel Processing*, September 2008.
- 60 **ICS08**: M. Baskaran, U. Bondhugula, S. Krishnamoorthy, J. Ramanujam, A. Rountev, and P. Sadayappan. "A compiler framework for optimization of affine loop nests for GPGPUs". *International Conference on Supercomputing*, June 2008.
- 61 **ICCS08**: J. Nieplocha, S. Krishnamoorthy, M. Valiev, M. Krishnan, B. Palmer, and P. Sadayappan. "Integrated data and task management for scientific applications". *8th International Conference on Computational Science*, June 2008.
- 62 **CC08**: U. Bondhugula, M. Baskaran, S. Krishnamoorthy, J. Ramanujam, A. Rountev, and P. Sadayappan. "Automatic transformations for communication-minimized parallelization and locality optimization in the polyhedral model". *International Conference on Compiler Construction*, April 2008.
- 63 **PPoPP08**: M. Baskaran, U. Bondhugula, S. Krishnamoorthy, J. Ramanujam, A. Rountev, and P. Sadayappan. "Automatic data movement and computation mapping for multi-level parallel architectures with explicitly managed memories". *ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming*, February 2008.
- 64 **Cluster07**: S. Krishnamoorthy, J. Canovas, V. Tipparaju, J. Nieplocha, and P. Sadayappan. "Non-collective parallel I/O for global address space programming models". *IEEE Cluster*, September 2007.
- 65 **PLDI07**: S. Krishnamoorthy, M. Baskaran, U. Bondhugula, J. Ramanujam, A. Rountev, and P. Sadayappan. "Effective automatic parallelization of stencil computations". *ACM SIGPLAN Conference on Programming Language Design and Implementation*, June 2007.
- 66 **SC06**: S. Krishnamoorthy, U. Catalyurek, J. Nieplocha, A. Rountev, and P. Sadayappan. "Hypergraph partitioning for automatic memory hierarchy management". *Supercomputing*, November 2006.
- 67 **SC06**: M. Blocksome, C. Archer, T. Inglett, P. McCarthy, M. Mundy, J. Ratterman, A. Sidelnik, B. Smith, G. Almasi, J. Castanos, D. Lieber, J. Moreira, S. Krishnamoorthy, and V. Tipparaju. "Design and implementation of a one-sided communication interface for the IBM eServer Blue Gene supercomputer". *Supercomputing*, November 2006.
- 68 **Cluster06**: N. Vydyanathan, S. Krishnamoorthy, G. Sabin, U. Catalyurek, T. Kurc, P. Sadayappan, and J. Saltz. "Locality conscious processor allocation and scheduling for mixed-parallel applications". *IEEE International Conference on Cluster Computing*, September 2006.
- 69 **PACT06**: Q. Lu, S. Krishnamoorthy, and P. Sadayappan. "Combining analytical and empirical approaches in tuning matrix transposition". *15th International Conference on Parallel Architectures and Compiler Techniques*, September 2006.
- 70 **ICPP06**: N. Vydyanathan, S. Krishnamoorthy, G. Sabin, U. Catalyurek, T. Kurc, P. Sadayappan, and J. Saltz. "An integrated approach for processor allocation and scheduling of mixed-parallel applications". *35th International Conference on Parallel Processing*, August 2006.
- 71 **HPDC06**: G. Khanna, N. Vydyanathan, U. Catalyurek, T. Kurc, S. Krishnamoorthy, P. Sadayappan, and J. Saltz. "Task scheduling and file replication for data-intensive jobs with batch-shared I/O". *15th IEEE International Symposium on High Performance Distributed Computing*, June 2006.
- 72 **ICCS06**: A. Hartono, Q. Lu, X. Gao, S. Krishnamoorthy, M. Nooijen, G. Baumgartner, V. Choppella, D. Bernholdt, R. Pitzer, J. Ramanujam, A. Rountev, and P. Sadayappan. "Identifying cost-effective common subexpressions to reduce operation count in tensor contraction evaluations". *6th International Conference on Computational Science*, May 2006.

- 73 **HiPC05**: S. Krishnamoorthy, J. Nieplocha, and P. Sadayappan. "Data and computation abstractions for dynamic and irregular computations". *12th Annual International Conference on High-Performance Computing*, December 2005.
- 74 **SC05**: S. Sahoo, S. Krishnamoorthy, R. Panuganti, and P. Sadayappan. "Integrated loop optimizations for data locality enhancement of tensor contraction expressions". *Supercomputing*, November 2005.
- 75 **IPDS05**: S. Sahoo, R. Panuganti, S. Krishnamoorthy, and P. Sadayappan. "Cache miss characterization and data locality optimization for imperfectly nested loops on shared-memory multiprocessors". *19th International Parallel and Distributed Processing Symposium*, April 2005.
- 76 **HiPC04**: S. Krishnamoorthy, G. Baumgartner, C. Lam, J. Nieplocha, and P. Sadayappan. "Efficient layout-transformation support for disk-based multidimensional arrays". *11th Annual International Conference on High-Performance Computing*, December 2004.
- 77 **IPDPS04**: S. Krishnan, S. Krishnamoorthy, G. Baumgartner, C. Lam, J. Ramanujam, P. Sadayappan, and V. Choppella. "Efficient synthesis of out-of-core algorithms using a nonlinear optimization solver". *18th International Parallel and Distributed Processing Symposium*, April 2004 (**Best Paper Award**).
- 78 **HiPC03**: S. Krishnan, S. Krishnamoorthy, G. Baumgartner, D. Cociorva, C. Lam, P. Sadayappan, J. Ramanujam, D. Bernholdt, and V. Choppella. "Data locality optimization for synthesis of efficient out-of-core algorithms". *10th Annual International Conference on High-Performance Computing*, December 2003 (**Best Paper Award**).
- 79 **Cluster03**: S. Krishnamoorthy, G. Baumgartner, D. Cociorva, C. Lam, and P. Sadayappan. "Efficient parallel out-of-core matrix transposition". *International Conference on Cluster Computing*, December 2003.

Refereed Workshop Publications

- 80 **LSPP15**: D. Chavarria, M. Halappanavar, S. Krishnamoorthy, J. Manzano, A. Vishnu, A. Hoisie. "On the impact of execution models: a case study in computational chemistry". *Joint Workshop on High-Level Parallel Programming Models and supportive Environments and Large-Scale Parallel Processing*, May 2015.
- 81 **Beo14**: D. Chavarria, J. Manzano, S. Krishnamoorthy, A. Vishnu, K. Barker, and A. Hoisie. "SCaLeM: a framework for characterizing and analyzing execution models". *20 Years of Beowulf*, October 2014.
- 82 **P2S214**: H. Arafat, S. Krishnamoorthy, and P. Sadayappan. "Checksumming strategies for data in volatile memories". *International Workshop on Parallel Programming Models and Systems Software for High-End Computing (P2S2)*, September 2014.
- 83 **ParGraph12**: J. Daily, S. Krishnamoorthy, A. Kalyanaraman. "Towards scalable optimal sequence homology detection". *Workshop on Parallel Algorithms and Software for Analysis of Massive Graphs (ParGraph)*, December 2012.
- 84 **WHIST11**: M. Hermanns, S. Krishnamoorthy, and F. Wolf. "A scalable replay-based infrastructure for the performance analysis of one-sided communication". *First International Workshop on High-performance Infrastructure for Scalable Tools (WHIST)*, May 2011.
- 85 **ROSS11**: E. Van Hensbergen, R. Minnich, C. Janssen, S. Krishnamoorthy, A. Marquez, M. Gokhale, P. Sadayappan, J. Mckie, and J. Appavoo. "Fault oblivious exascale whitepaper". *International Workshop on Runtime and Operating Systems for Supercomputers (ROSS)*, May 2011.
- 86 **AACEC10**: J. Siegel, O. Villa, S. Krishnamoorthy, and A. Tumeo. "Efficient sparse matrix-matrix multiplication on heterogeneous high performance systems". *Workshop on Application/Architecture Co-design for Extreme-scale Computing (AACEC)*, September 2010.
- 87 **Resilience10**: J. Dinan, A. Singri, P. Sadayappan, and S. Krishnamoorthy. "Selective recovery from failures in a task parallel programming model". *10th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing – Resilience Workshop*, May 2010.

- 88 **CPC09**: U. Bondhugula, M. Baskaran, A. Hartono, S. Krishnamoorthy, J. Ramanujam, A. Rountev, and P. Sadayappan. "A polyhedral framework for automatic parallelization and locality optimization". *Workshop on Compilers for Parallel Computing (CPC'09)*, January 2009.
- 89 **POHLL06**: S. Krishnamoorthy, U. Catalyurek, J. Nieplocha, and P. Sadayappan. "An approach to locality-conscious load balancing and transparent memory hierarchy management with a global-address-space parallel programming model". *IPDPS Workshop on Performance Optimization for High-Level Languages and Libraries*, April 2006.
- 90 **LCPC05**: X. Gao, S. Krishnamoorthy, S. Sahoo, C. Lam, G. Baumgartner, J. Ramanujam, and P. Sadayappan. "Efficient search-space pruning for integrated fusion and tiling transformations". *The 18th International Workshop on Languages and Compilers for Parallel Computing*, October 2005.
- 91 **LACSI04**: S. Krishnamoorthy, G. Baumgartner, C. Lam, J. Nieplocha, and P. Sadayappan. "Layout transformation support for the disk resident arrays framework". *Los Alamos Computer Science Institute Fifth Annual Symposium*, October 2004.
- 92 **LCPC04**: Q. Lu, X. Gao, S. Krishnamoorthy, G. Baumgartner, J. Ramanujam, and P. Sadayappan. "Empirical performance-model driven data layout optimization". *17th International Workshop on Languages and Compilers for Parallel Computing*, September 2004.

Technical Reports

- 93 S. Rajbhandari, A. Nikam, P. Lai, K. Stock, S. Krishnamoorthy, and P. Sadayappan. "Framework for distributed contractions of tensors with symmetry". *Department of Computer and Information Science, Ohio State University. Technical Report OSU-CISRC-10/013-TR23, Oct 2013*
- 94 A. Hartono, M. Baskaran, C. Bastoul, A. Cohen, S. Krishnamoorthy, B. Norris, J. Ramanujam, and P. Sadayappan. "Primitile: A parametric multi-level tiler for imperfect loop nests". *Department of Computer and Information Science, Ohio State University. Technical Report OSU-CISRC-2/09-TR04, Feb 2009*
- 95 M. Baskaran, U. Bondhugula, S. Krishnamoorthy, J. Ramanujam, A. Rountev, and P. Sadayappan. "Automatic data movement and computation mapping for multi-level parallel architectures with explicitly managed memories". *Department of Computer and Information Science, Ohio State University. Technical Report OSU-CISRC-2/08-TR05, Feb 2008*
- 96 U. Bondhugula, M. Baskaran, S. Krishnamoorthy, J. Ramanujam, A. Rountev, and P. Sadayappan. "Affine transformations for communication minimal parallelization and locality optimization of arbitrarily nested loop sequences". *Department of Computer and Information Science, Ohio State University. Technical Report OSU-CIRSC-5/07-TR43, May 2007*
- 97 M. Baskaran, U. Bondhugula, S. Krishnamoorthy, J. Ramanujam, A. Rountev, and P. Sadayappan. "A compiler framework for optimization of affine loop nests for general purpose computations on GPUs". *Department of Computer and Information Science, Ohio State University. Technical Report OSU-CISRC-12/07-TR78, Dec 2007*
- 98 N. Vydyanathan, S. Krishnamoorthy, G. Sabin, U. Catalyurek, T. Kurc, P. Sadayappan, and J. Saltz. "An integrated approach for processor allocation and scheduling of mixed-parallel applications". *Department of Computer and Information Science, Ohio State University. Technical Report OSU-CIRSC-2/06-TR20, Feb 2006*
- 99 S. Krishnamoorthy, G. Baumgartner, D. Cociorva, C. Lam, and P. Sadayappan. "On efficient out-of-core matrix transposition". *Department of Computer and Information Science, Ohio State University. Technical Report OSU-CIRSC-9/03-TR52, Sep 2003*

Other Publications

- 100 **CHIUW14**: D. Chavarria, S. Krishnamoorthy, J. Manzano, and A. Vishnu. "Evaluating next generation PGAS languages for computational chemistry". *Chapel Implementers and Users Workshop*, May 2014.

- 101 **EXAOSR12**: R. Gioiosa and S. Krishnamoorthy. "Operating system support for fine-grained task migration". *Position Paper, DOE ASCR Workshop on Exascale Operating Systems and Runtime Software, Washington, DC, October 2012.*
- 102 **ASCR12**: S. Krishnamoorthy. "Execution model choices for sustainable application design". *Position Paper, DOE ASCR Exascale Research Conference, Portland, OR, April 2012.*
- 103 **CUG09**: O. Villa, D. Chavarria, A. Marquez, V. Gurumoorthi, and S. Krishnamoorthy. "Effects of floating-point non-associativity on numerical computations on massively multithreaded systems". *Cray User's Group, Atlanta, GA, May 2009.*
- 104 **NGS08**: U. Bondhugula, M. Baskaran, A. Hartono, S. Krishnamoorthy, J. Ramanujam, A. Rountev and P. Sadayappan. "Towards effective automatic parallelization for multicore systems". *IPDPS Workshop on Next Generation Software (NSF-NGS), April 2008.*
- 105 **NGS07**: S. Krishnamoorthy, U. Catalyurek, J. Nieplocha, A. Rountev, and P. Sadayappan. "A global address space framework for locality aware scheduling of block-sparse computations". *IPDPS Workshop on Next Generation Software, April 2007.*
- 106 **NGS06**: S. Krishnamoorthy, U. Catalyurek, J. Nieplocha, A. Rountev, and P. Sadayappan. "An extensible global address space framework with decoupled task and data abstractions". *IPDPS Workshop on Next Generation Software, April 2006.*
- 107 **patHPC05**: S. Krishnamoorthy, P. Sadayappan, J. Nieplocha, and M. Krishnan. "Locality-aware load balancing for dynamic and irregular computations". *Workshop on Patterns in High Performance Computing, May 2005.*

Posters

- 108 **SC11**: R. Minnich, C. Janssen, S. Krishnamoorthy, A. Marquez, W. Ma, M. Gokhale, P. Sadayappan, E. Van Hensbergen, J. Appavoo, and J. Mckie. "FOX: a fault-oblivious extreme scale execution environment". *IEEE/ACM International Conference for High Performance Computing, Networking, Storage and Analysis (SC), November 2011.*
- 109 **SC11**: J. Dinan, P. Balaji, J. Hammond, S. Krishnamoorthy, and V. Tipparaju. "High-level, one-sided programming models on MPI: a case study with Global Arrays and NWChem". *IEEE/ACM International Conference for High Performance Computing, Networking, Storage and Analysis (SC), November 2011.*
- 110 **PACT11**: W. Ma, S. Krishnamoorthy, and G. Agrawal. "Parameterized micro-benchmarking: an auto-tuning approach for complex applications". *Twentieth International Conference on Parallel Architectures and Compilation Techniques, October 2011.*
- 111 **SC10**: N. Ali, S. Krishnamoorthy, N. Govind, O. Villa, J. Dinan, and R. Harrison. "Scalable fault tolerance in PGAS programming models". *International Conference for High Performance Computing, Networking, Storage, and Analysis (SC), November 2010.*
- 112 **PGAS06**: S. Krishnamoorthy, B. Larkins, A. Rountev, P. Sadayappan, J. Nieplocha, and R. Harrison. "Parallel global address space framework with multiple inter-operable abstractions". *The Second conference on Partitioned Global Address Space Programming Models, October 2006.*
- 113 **HiPC01**: N. Melchizedec, S. Krishnamoorthy, V. Vivekananthamoorthy, and A. Siromoney. "Web service pipelining". *The 8th International Conference on High Performance Computing, December 2001.*

Presentations

Invited Talks

- NWChem14 "Making task parallelism work for scientific applications". New and Future Directions in Atomistic Simulation & Modeling Workshop, Seattle, WA, October 2014.

- SICM2 “Writing tomorrow’s computational chemistry codes today”. (SICM)2 Parallel Computing Workshop, New York, NY, April 2014.
- IISc13 “Concrete ingredients for flexible programming abstractions: making task parallelism work”. Indian Institute of Science, Bangalore, India, October 2013.
- SC12-BoF “Runtime requirements for Unistack”. Unistack: Interoperable Community Runtime Environment for Exascale Systems, Birds of a feather at Supercomputing, Salt Lake City, WA, November 2012.
- ASCR12 “Scalable resilience for finer-grained concurrency”. Exascale Research Conference, Arlington, VA, October 2012.
- ASCR12 “Effective realization of task parallel programming abstractions”. Exascale Research Conference, Arlington, VA, October 2012.
- PPME12 “TASCEL: concrete ingredients for flexible programming abstractions”. Workshop on Productive Programming Models for Exascale, Portland, OR, August 2012.
- Charm12 “TASCEL: a task parallel runtime system for non-SPMD programs”. 10th Annual Workshop on Charm++ and its Applications, Urbana-Champaign, IL, May 2012.
- ESCMA12 “NWChem: optimizing tensor contraction expressions for hybrid CPU-GPU execution”. Electronic Structure Calculation Methods on Accelerators Workshop, Oak Ridge, TN, February 2012.
- SC11-BoF “TASCEL: task scheduling library for load balancing and fault tolerance”. Punctuated Equilibrium at Exascale, Birds-of-a-feather at Supercomputing, Seattle, WA, November 2011.
- FallCreek11 “Unified and interoperable programming models”. 2011 Fall Creek Falls Conference, Gatlinburg, TN, September 2011
- ASCR11 “(De)composable abstractions for a changing architectural landscape”. DOE ASCR Workshop on Exascale Programming Challenges, Marina Del Rey, CA, July 2011
- FASTOS09 “Handling faults in a global address space programming model”. Forum to Address Scalable Technology for runtime and Operating Systems (FASTOS2) workshop (co-located with ICS’09), Yorktown Heights, NY, June 2009
- Teragrid09 “Handling faults in a global address space programming model”. NSF TeraGrid workshop on fault tolerance, Albuquerque, NM, March 2009

Selected Conference/Workshop Talks

- PLDI14 “Compiler-assisted detection of transient memory errors”. ACM SIGPLAN Conference on Programming Language Design and Implementation, Edinburgh, UK, June 2014
- Salishan14 “Palm – Tool for analytical model generation”. Salishan High Speed Computing Conference, Gleneden Beach, OR, April 2014
- WHIST12 “MODA: a framework for memory centric performance characterization”. International Workshop on High-performance Infrastructure for Scalable Tools, Venice, Italy, June 2012
- ICS12 “Data-driven fault tolerance for work stealing computations”. International Conference on Supercomputing, Venice, Italy, June 2012
- HPDC12 “Work stealing and persistence-based load balancers for iterative overdecomposed applications”. ACM Symposium on High-Performance Parallel and Distributed Computing, Delft, the Netherlands, June 2012
- ASCR12 “Execution models for sustainable application design”. DOE ASCR Exascale Research Conference, Position Paper, Portland, OR, April 2012
- ROSS11 “Fault oblivious exascale whitepaper”. International Workshop on Runtime and Operating Systems for Supercomputers, Tucson, AZ, May 2011
- CCGrid10 “Scalable communication trace compression”. International Symposium on Cluster, Cloud and Grid Computing, Melbourne, Australia, May 2010
- Resilience10 “Selective recovery from failures in a task parallel programming model”. Resilience workshop (co-located with International Symposium on Cluster, Cloud and Grid Computing), Melbourne, Australia, May 2010

- PLDI07 "Effective parallelization of stencil computations". ACM SIGPLAN Conference on Programming Language Design and Implementation, San Diego, CA, June 2007
- SC06 "Hypergraph partitioning for automatic memory hierarchy management". International Conference for High Performance Computing, Networking, Storage and Analysis, Tampa, FL, November 2006
- POHLL06 "An approach to locality-conscious load balancing and transparent memory hierarchy management with a global-address-space parallel programming model". IPDPS Workshop on Performance Optimization for High-Level Languages and Libraries, Rhodos, Greece, April 2006
- patHPC05 "Locality-aware load balancing for dynamic and irregular computations". Workshop on Patterns in High Performance Computing, Urbana-Champaign, IL, May 2005
- HiPC04 "Efficient layout-transformation support for disk-based multidimensional arrays". International Conference on High Performance Computing, Bangalore, India, December 2004
- IPDPS04 "Efficient synthesis of out-of-core algorithms using a nonlinear optimization solver". International Parallel and Distributed Processing Symposium, Santa Fe, NM, USA, April 2004
- HiPC03 "Data locality optimization for synthesis of efficient out-of-core algorithms". International Conference on High Performance Computing, Hyderabad, India, December 2003
- Cluster03 "Efficient parallel out-of-core matrix transposition". International Conference on Cluster Computing, Hong Kong, December 2003

Panel Presentations

- XSTACK14 "Resilience Panel". DOE ASCR X-Stack PI meeting, Cambridge, MA, May 2014
- XSTACK13 "Runtime research in DOE ASCR X-Stack Program". DOE ASCR X-Stack PI meeting, Berkeley, CA, March 2013
- XSTACK13 "Resilience research in DOE ASCR X-Stack Program". DOE ASCR X-Stack PI meeting, Berkeley, CA, March 2013
- EXAOSR12 "OS/R support for novel programming models". Workshop on Exascale Operating Systems and Runtime Software, Washington, D.C., October 2012

Tutorials

- B. Palmer, J. Daily, D. Chavarria, A. Vishnu, S. Krishnamoorthy. "The Global Arrays toolkit – a comprehensive, production-level, application-tested parallel programming environment". SC12, November 2012.
- B. Palmer, S. Krishnamoorthy, D. Chavarria. "Parallel programming using the Global Arrays toolkit: now and into the future". University of Washington, November 2011.
- M. Krishnan, S. Krishnamoorthy, J. Daily, P. Sadayappan, D. Hudak. "Building scalable parallel applications with the Global Arrays toolkit". Ohio Supercomputer Center, March 2011
- B. Palmer, M. Krishnan, S. Krishnamoorthy, and P. Sadayappan. "Introduction to the Global Arrays toolkit and ARMCI runtime". Partitioned Global Address Space Conference (PGAS), New York, NY, October 2010
- B. Palmer, M. Krishnan, S. Krishnamoorthy, and P. Sadayappan. "Parallel programming using the Global Arrays toolkit". IEEE Cluster, New Orleans, LA, August 2009

Professional Activities

Organization

- Session Chair: Fourth International Workshop on Accelerators and Hybrid Exascale Systems (AsHES) 2015
- Session Chair: IEEE International Parallel and Distributed Processing Symposium (IPDPS) 2015
- Program Co-Chair: International Workshop on High-level Parallel Programming Models and Supportive Environments (HIPS) 2015

- Program Co-Chair: International Workshop on Domain-Specific Languages and High-Level Frameworks for High Performance Computing (WOLFHPC) 2015, 2014, 2013, 2012, 2011
- Guest Editor: Special Issue of Journal of Parallel and Distributed Computing (JPDC): Domain-Specific Languages and High-Level Frameworks for High-Performance Computing 2013
- Session Chair: IEEE/ACM International Conference for High Performance Computing, Networking, Storage and Analysis (SC) 2013
- Panel Moderator: Workshop on Exascale Operating Systems and Runtime Software (EXAOSR) 2012
- Session Chair: Workshop on Exascale Operating Systems and Runtime Software (EXAOSR) 2012
- Organizing Committee: Productive Programming Models for Exascale (PPME) 2012
- Session Chair: Productive Programming Models for Exascale (PPME) 2012
- Proceedings Chair: ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP) 2012
- Publicity Chair: International Workshop on Accelerators and Hybrid Exascale Systems (AsHES) 2012
- Session Chair: International Workshop on High-performance Infrastructure for Scalable Tools (WHIST) 2011
- Session Chair: International Workshop on Characterizing Applications for Heterogeneous Exascale Systems (CACHES) 2011

Technical Program Committees

- International Conference on Parallel Architectures and Compilation Techniques (PACT): 2015
- ACM SIGPLAN Workshop on Memory Systems Performance and Correctness (MSPC): 2014
- Conference on Partitioned Global Address Space Programming Models (PGAS): 2014
- IEEE International Parallel and Distributed Processing Symposium (IPDPS): 2015, 2014
- International Workshop on Accelerators and Hybrid Exascale Systems (AsHES): 2015, 2014
- IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid): 2015, 2014, 2012
- IFIP International Conference on Network and Parallel Computing (NPC): 2015, 2014, 2013
- IEEE/ACM International Conference for High Performance Computing, Networking, Storage and Analysis (SC): 2013
- Workshop on Resiliency in High Performance Computing (Resilience) in Clusters, Clouds, and Grids: 2015, 2014, 2013
- IEEE International Conference on Scalable Computing and Communications (ScalCom): 2012
- International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD): 2012
- ACM International Conference on Computing Frontiers (CF): 2012
- ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP): 2012
- IEEE International Conference on Parallel and Distributed Systems (ICPADS): 2012
- International Workshop on Characterizing Applications for Heterogeneous Exascale Systems (CACHES): 2011
- IEEE International Conference on High Performance Computing and Communications (HPCC): 2010
- International Workshop on Parallel Programming Models and Systems Software for High-end Computing (P2S2): 2009
- IEEE International Conference on High Performance Computing (HiPC): 2009, 2008

Technical Referee for Journals

- Theoretical Computer Science: 2015
- IEEE Transactions on Computers: 2014
- ACM Transactions on Parallel Computing (TOPC): 2015, 2013
- ACM Transactions on Reconfigurable Technology and Systems (TRETs): 2011
- Applied Mathematics and Computation (AMC): 2013
- Concurrency and Computation: Practice and Experience (CCPE): 2014, 2013, 2012
- IEEE Transactions on Parallel and Distributed Systems (TPDS): 2015, 2014, 2013
- IEEE Transactions on Visualization and Computer Graphics (TVCG): 2013
- Future Generation Computer Systems (FGCS): 2012
- International Journal of High Performance Computing Applications (IJHPCA): 2014, 2012, 2011
- International Journal of Parallel Programming (IJPP): 2014, 2013
- Journal of Computational Chemistry: 2013
- Journal of Parallel and Distributed Computing (JPDC): 2014, 2011, 2008
- Parallel Computing (PARCO): 2013, 2010

External Reviewer for Conferences/Workshops

- IEEE/ACM International Conference for High Performance Computing, Networking, Storage and Analysis (SC): 2014, 2012, 2011, 2010, 2008
- International Conference on Parallel Architectures and Compilation Techniques (PACT): 2012, 2011, 2008
- Euro-Par: 2011
- IEEE International Conference on Cluster Computing (Cluster): 2010
- ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP): 2014, 2007
- IEEE International Parallel and Distributed Processing Symposium (IPDPS): 2006
- Workshop on Languages and Compilers for Parallel Computing (LCPC): 2005
- Workshop on Performance Optimization for High-Level Languages and Libraries (POHLL): 2006

Technical Poster Committees

- International Conference on Parallel Processing (ICPP): 2012

Advisorships**Post-doctoral Advisees**

- Bin Ren, Ph.D., Ohio State University
- Nawab Ali, Ph.D., Ohio State University
- Wenjing Ma, Ph.D., Ohio State University

Internship/Student Advisees

- Zhijia Zhao, College of William & Mary (Summer 2015)
- Jordyn Maglalang, Washington University in St. Louis (Summer 2015)
- Jesmin Jahan Tithi, Stonybrook University (Summer 2015)
- Wenlei Bao, Ohio State University (Summer 2014 & Summer 2015)
- Mehmet Can Kurt, Ohio State University (Summer 2013 & Winter/Summer 2014)
- Shaizeen Aga, University of Michigan (Summer 2012)
- Xin Huo, Ohio State University (Spring & Summer 2012)
- Humayun Arafat, Ohio State University (Fall 2011)
- Jonathan Lifflander, University of Illinois Urbana-Champaign (Summer/Fall 2011 & Winter/Summer 2014)
- S.M. Faisal, Ohio State University (Summer 2011)
- Pai-Wei Lai, Ohio State University (Summer 2011 & Summer 2012)
- Wenjing Ma, Ohio State University (Winter & Spring 2010)
- Long Chen, University of Delaware (Summer & Fall 2009)
- Mahesh Ravishankar, Ohio State University (Summer 2009)
- James Dinan, Ohio State University (Winter 2009)

Thesis Committee Membership

- Rajkiran Panuganti, "A high productivity framework for parallel data intensive computing in MATLAB," Ohio State University, Ph.D., 2009.
- Jeff Daily, "Scalable methods for biological sequence homology detection," Washington State University, Ph.D., 2015.
- Jonathan Lifflander, "Optimizing work stealing algorithms with scheduling constraints," University of Illinois at Urbana-Champaign.