Sunita Chandrasekaran
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Computational Research and Programming lab

Professional Experience

- **Co-Director**; AI Center of Excellence (AICoE), University of Delaware, Newark, USA. *September 2022 -*

- **Associate Professor**; Department of Computer and Information Sciences (CIS), University of Delaware, Newark, USA. *September 2021 –*

- **Computational Scientist**, Brookhaven National Laboratory, Upton, NY 11973-5000. September 2021 -

- **Special Content Journal Editor**, Future Generation Computing Systems (FGCS). August 2021 - July 2023

- **ACM Senior Member**. *Feb 2022 - present*

- **IEEE Senior Member**. *Feb 2021 - present*

- **David L. and Beverly J.C. Mills Career Development Chair**; Department of Computer and Information Sciences (CIS), University of Delaware, Newark, USA. *September 2020 – August 2024*

- **Assistant Professor**; Department of Computer and Information Sciences (CIS), University of Delaware, Newark, USA. *September 2015 – Aug 2021*

- **Board of Directors**; OpenACC Organization. *Spring 2020 – Present*

- **User Representative Chair**; OpenACC Organization. *June 2017 – Present*

- **Postdoctoral Researcher**; Department of Computer Science, University of Houston, Houston, TX, USA. *December 2010 – August 2015*

Education

- Nanyang Technological University (NTU), Singapore, Ph.D., School of Computer Science
  Title: Tools and Algorithms for High Level Algorithm Mapping to FPGA, 2012

- Anna University, Chennai, India, Bachelors of Engineering, Electrical & Electronics
  Final Year Thesis Title: Experimental Studies in Statistical Signal Processing, 2005

Research Interests

- Exploring programming language features, building compiler and runtime components and building validation and verification testsuites for OpenMP and OpenACC targeting High Performance Computing (HPC) systems

- Migrating large-scale scientific applications spanning biophysics, solar physics, plasma physics and next-generation sequencing to HPC systems

- Building predictive models using machine learning to study usability of drugs for rare diseases

Current Research Grants

- DOE Exascale Computing Project (ECP) SOLLVE, PI
  Title: Scaling OpenMP With LLVm for Exascale Performance and Portability (SOLLVE)
  Duration: 10/19/21 – 12/31/2023

- NIH/Leidos Biomedical Research/Frederick National Lab for Cancer Research, PI
  Title: Using Machine Learning to build cancer drug response models
  Duration: 06/01/2021 -

- Helmholtz Zentrum Dresden Rossendor (HZDR) Germany, PI
  Title: Exploring a performance portable software stack for PIConGPU to target a next-generation computing system, the FRONTIER Exascale System at ORNL (OLCF CAAR Project)
  Duration: 10/01/2020 – 03/31/2023

- NSF CCF-1814609, PI
  Title: PAW: Novel Functionality in Programming Models to Productively Abstract Wavefront Parallel Pattern and NSF REU
  Duration: 10/01/2018 – 09/30/2023
  NSF REU Supplement: Summer 2020

- DOE Exascale Computing Project (ECP) SOLLVE subcontract project), PI
  Title: Building a Validation and Verification Suite for OpenMP 4.5
  Duration: 04/20/17 – 12/31/2023

- National Center for Atmospheric Research (NCAR), PI
  Title: Porting the MPS/University of Chicago Radiative MHD Models to GPUs Using OpenACC
  Duration: 06/01/2018 –

- Nemours/Alfred I. duPont Hospital for Children, PI
  Title: Big Data Analytics and Machine Learning
  Duration: 09/01/2018 – 04/30/2023

- University of Delaware Research Foundation, PI
  Title: Developing an accelerated Next Generation Sequence (NGS) alignment tool using GPUs for paired-end reads
  Duration: 06/01/2020 - 05/31/2022

- NVIDIA Research Donation, PI
  Title: OpenACC Validation and Verification Testsuite
  Duration: 09/01/16 – present

PastGrants

- NSF EAGER-1842623, co-PI
  Title: Measuring Real World Application Performance on Next-Generation Computing Systems
  Duration: 10/01/2018 – 03/31/2021

- RAPID Reaction Software System, Department of Energy (DOE) and State of Delaware, co-PI
  Duration: 09/01/17 – 08/31/21

- NVIDIA Curriculum Development Grant (Gift), PI
  Title: Creating teaching content for NVIDIA's teaching kit
  Duration: 05/01/2020 - 09/30/2020

Awards and Honors

- 2022 SPEC HPG Achievement (Contributor) award

- 2022 IEEE TPDS Award for Editorial Excellence

- 2021 Outstanding Editors Award Recipient of the Future Generation Computer Systems (FGCS)

- IEEE Senior Member, Feb 2021 - Present

- David L. and Beverly J.C. Mills Career Development Chair, Department of Computer & Information Sciences, University of Delaware, September 2020 - August 2024

- College of Engineering Excellence in Teaching Award, University of Delaware, May 2020

- One of the 7 Invited Featured Speakers in the High Performance Computing (HPC) category, GPU Technology Conference (GTC). March 2019. CA, USA

- Best Research Poster Award: Accelerating Chemical Shift Prediction for Large-scale Biomolecular Modeling. Eric Wright, Mauricio Ferrato, Alexander Bryer, Robert Searles, Juan Perilla, Sunita Chandrasekaran. International Supercomputing Conference (ISC) High Performance, June 2019, Frankfurt, Germany

- Best Research Poster award: Vertically Integrated Project (VIP) midatlantic VIP competition. Accelerating Chemical Shift Prediction of Protein Structures using GPUs. Eric Wright, Mauricio Ferrato, Alexander Bryer, Robert Searles, Juan Perilla, Sunita Chandrasekaran. March 2018, Delaware, USA

- IEEE TCHPC Award for Excellence for Early Career Researchers in High Performance Computing, November, 2016

- Lead Investigator, NVIDIA GPU Education Center award to University of Delaware, June 2016

- Technical Leadership Award, Standard Performance Evaluation Corporation (SPEC) High Performance Group (HPG), Jan 2016

- Benchmark Project Leadership Recognition Award, SPEC HPG, 2014

Publications

Book & Book Chapters

- Sunita Chandrasekaran and Guido Juckeland. OpenACC for Programmers: Concepts and Strategies
  Co-Edited Book published by Pearson Addison-Wesley Professional; 1 edition. ISBN-13: 978-0134694283,
  November 2017

- Sunita Chandrasekaran, Rengan Xu and Barbara Chapman. Using OpenACC for stencil and Feldkamp
  algorithms
  Co-authored a Chapter in an Edited Book: Parallel Programming with OpenACC Edited by Rob Farber.
  Morgan Kaufmann. ISBN-13: 978-0124103979, November 2016

- Barbara Chapman, Deepak Eachempati and Sunita Chandrasekaran. Chapter on OpenMP
  Co-authored a Chapter in an Edited Book: Programming Models for Parallel Computing Edited by Pavan
  Balaji, MIT Press. ISBN-13: 978-0262528818, 2015

Refereed Journals

- Mauricio H Ferrato, Adam G Marsh, Karl R Franke, Benjamin J Huang, E Anders Kolb, Deborah DeRyckere,
  Douglas K Graham, Sunita Chandrasekaran, Erin L Crowgey, Machine learning classifier approaches for
  predicting response to RTK-Type-III Inhibitors demonstrates high accuracy using transcriptomic signatures
  and ex vivo data, Bioinformatics Advances, 2023, https://doi.org/10.1093/bioadv/vbad034

- Matt Stack, Paul Macklin, Robert Searles, Sunita Chandrasekaran. OpenACC Acceleration of an Agent-
  Based Biological Simulation Framework, 2022, ISSN: 1521-9615 IEEE CiSE, https://10.0.4.85/MCSE.2022.3226602

- Matt Leinhauser, Rene Widera, Sergi Bastrakov, Alex Debus, Michael Bussmann, and Sunita Chan-
  drasekaran, Metrics and Design of an Instruction Roofline Model for AMD GPUs. ACM Transactions on
  Parallel Computing, Volume 9, Issue 1, March 2022, Article No.:1, pp 1–14 https://doi.org/10.1145/3505285

- Eric Wright, Mauricio Ferrato, Alex Bryer, Robert Searles, Juan Perilla and Sunita Chandrasekaran. Ac-
  celerating Prediction of Chemical Shift of Protein Structures on GPUs.
  PLOS Computational Biology. 16(5): e1007877. 2020
  DOI: https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1007877

- Robert Searles, Sunita Chandrasekaran, Wayne Joubert and Oscar Hernandez (2019). MPI+ OpenACC:
  Accelerating Radiation Transport Mini-application, Minisweep, on Heterogeneous Systems. Journal of
  Computer Physics Communications (CPC).
  https://doi.org/10.1016/j.cpc.2018.10.007. Volume 236, pp. 176-187, 2019.

- Millad Ghane, Sunita Chandrasekaran and Margaret S. Cheung (2019). Pointerchain: Tracing pointers to
  their roots: A case study in molecular dynamics simulations. Journal of Parallel Computing (PARCO).
  https://doi.org/10.1016/j.parco.2019.04.007. Volume 85, pp. 190-203. 2019.

- Jose Manuel Monsalve Diaz, Kyle Friedline, Swaroop Pophale, Oscar Hernandez, David Bernholdt and
  Sunita Chandrasekaran. Analysis of OpenMP 4.5 Offloading in Implementations: Correctness and Over-
  head. Journal of Parallel Computing (PARCO).
  https://doi.org/10.1016/j.parco.2019.102546. Volume 89, pp. 102546, 2016.

- Michael Wolfe, Jungwon Kim, Xiaonan Tian, Rengan Xu, Barbara Chapman and Sunita Chandrasekaran.
  The OpenACC Data Model: Preliminary Study on Its Major Challenges and Implementations. Journal of
  Parallel Computing (PARCO).
  https://doi.org/10.1016/j.parco.2018.07.003, Volume 78, pp. 15-27. 2018.

- Sunita Chandrasekaran, Guido Juckeland, Meifeng Lin et. al., Best Practices in Running Collaborative

GPU Hackathons. Journal of IEEE Computing in Science and Engineering (IEEE CiSE). 10.1109/M-CSE.2018.042781332. NSPEC Accession Number: 17916295, pg. 95-106, 2018.

- Robert Searles, Stephen Herbein, Travis Johnston, Michela Taufer and Sunita Chandrasekaran. Creating a Portable, High-Level Graph Analytics Framework for Compute and Data-Intensive Applications
  In Proceedings of the International Journal of High Performance Computing and Networking (IJHPCN). DOI: 10.1504/IJHPCN.2017.10007922, Vol.13. No.1, pp.105 - 118. 2017.

- Xiaonan Tian, Rengan Xu, Yonghong Yan, Sunita Chandrasekaran, Deepak Eachempati, and Barbara Chapman. Compiler Transformation of Nested Loops for GPGPUs
  Journal of Concurrency and Computation: Practice and Experience.
  http://dx.doi.org/10.1002/cpe.3648, ISSN: 1532-0634, 2015.

- Rengan Xu, Sunita Chandrasekaran and Barbara Chapman. Multi-GPU Support on Shared Memory System using Directive-based Programming Model
  Journal of Scientific Programming.
  http://dx.doi.org/10.1155/2015/621730, Volume 2015, Article ID 621730, 2015
  Impact factor:1.344

- Sunita Chandrasekaran, Shilpa Shanbagh, Ramkumar Jayaraman, HuiYan Cheah and Douglas Maskell. C2FPGA: A Dependency-Timing Graph Design Methodology.
  Journal of Parallel and Distributed Computing (JPDC)
  http://dx.doi.org/10.1016/j.jpdc.2012.09.001, Volume 73, Pages 1417-1429. 2012
  Impact factor:1.815

Refereed Conferences

- Eric Wright, Johannes Doerfert, Shilei Tian, Barbara Chapman, Sunita Chandrasekaran, Implementing OpenMP's SIMD Directive in LLVM's GPU Runtime, Accepted to ICPP 2023

- Holger Brunst, Sunita Chandrasekaran, Florina Ciorba, Nick Hagerty, Robert Henschel, Guido Juckeland, Junjie Li, Veronica G. Melesse Vergaa ,Sandra Wienke and Miguel Zavala, First Experiences in Performance Benchmarking with the New SPEChpc 2021 Suites, 2022 22nd IEEE International Symposium on Cluster, Cloud and Internet Computing (CCGrid), 2022, pp. 675-684, doi: 10.1109/CCGrid54584.2022.00077.

- Eric Wright, Cena Miller, Damien Przybylski, Matthias Rempel, Shiquan Su, Supreeth Suresh, Rich Loft, Sunita Chandrasekaran. Refactoring the MPS/University of Chicago Radiative MHD(MURaM) Model for GPU/CPU Performance Portability UsingOpenACC Directives.
  In Proceedings of the Platform for Advanced Scientific Computing Conference (PASC), pp. 1-12. 2021.
  https://dl.acm.org/doi/abs/10.1145/3468267.3470576

- Joshua Hoke Davis, Tao Gao, Sunita Chandrasekaran, Heike Jagode, Anthony Danalis, Jack J. Dongarra, Pavan Balaji, Michela Taufer. Characterization of Power Usage and Performance in Data-Intensive Applications Using MapReduce over MPI.
  Proceedings of the International Conference on Parallel Computing (ParCO).
  DOI:10.3233/APC200053, 287-298, September 2019.

- Robert Searles, Sunita Chandrasekaran, Oscar Hernandez and Wayne Joubert. Abstractions and Directives for Adapting Wavefront Algorithms to Future Architectures
  5th Platform for Advanced Scientific Computing Conference (PASC)
  DOI: https://doi.org/10.1145/3218176.3218228 pp. 1-10, July 2018.

- Jose Monsalve Diaz, Swaroop Pophale, Kyle Friedline, Oscar Hernandez, David E. Bernholdt and Sunita Chandrasekaran. Evaluating Support for OpenMP Offload Features.
  47th International Conference on Parallel Processing Companion (ICPP),
  DOI: 10.1145/3229710.3229717, pp. 1-10, August 2018.

- Millad Ghane, Sunita Chandrasekaran, Robert Searles, Margaret S. Cheung and Oscar Hernandez. Path forward for softwarization to tackle evolving hardware
  The International Society for Optics and Photonics (SPIE), Volume 10652
  DOI: https://doi.org/10.1117/12.23048132018 May 2018.

- Cheng Wang, Sunita Chandrasekaran, and Barbara Chapman, CusFFT: A High-Performance Sparse Fast Fourier Transform Algorithm on GPUs, 30th, IEEE International Parallel & Distributed Processing Symposium (IPDPS), Chicago,
  DOI: 10.1109/IPDPS.2016.95, pp. 963-972, May 23-27, 2016.

- Rengan Xu, Sunita Chandrasekaran, and Barbara Chapman, An Analytical Model-based Auto-tuning Framework for Locality-aware Loop Scheduling, International Supercomputing Conference (ISC), Frankfurt,
  DOI:10.1007/978-3-319-41321-1_1pp. 3-20, June 19-23, 2016.

- Cheng Wang, Sunita Chandrasekaran, Barbara Chapman, Jim Holt. Portable Mapping of OpenMP to Multicore Embedded Systems Using MCA APIs. In Proceedings of the 14th ACM SIGPLAN/SIGBED conference on Languages, compilers and tools for embedded systems (LCTES), pp. 153-162, Seattle, US, 2013

- Peng Sun, Sunita Chandrasekaran, and Barbara Chapman, Deploying OpenMP Task Parallelism on Multicore Embedded Systems with MCA Task APIs, IEEE High Performance Computing and Communications (HPCC),
  DOI: 10.1109/HPCC-CSS-ICESS.2015.88, pp. 843-847, 2015.

- Xiaonan Tian, Rengan Xu*, Yonghong Yan, Zhifeng Yun, Sunita Chandrasekaran, and Barbara Chapman. Compiling A High-Level Directive-based Programming Model for Accelerators. In Proceedings of Springer Verlag, 26th International Workshop on Languages and Compilers for High Performance Computing (LCPC), pp. 105-120, San Jose, USA, 2013

- Kevin A. Huck, Oscar Hernandez, Van Bui, Sunita Chandrasekaran, Barbara Chapman, Allen D. Malony, Lois Curfman McInnes, Boyana Norris. Capturing Performance Knowledge for Automated Analysis. IEEE/ACM International Conference for High Performance Computing, Networking, Storage and Analysis (SC), pp. 1-10, Austin, 2008

Refereed Workshops

- Thomas Huber, Swaroop Pophale, Nolan Baker, Michael Carr, Nikhil Rao, Jaydon Reap, Kristina Holsapple, Joshua Hoke Davis, Tobias Burnus, Seyong Lee, David E. Bernholdt, Sunita Chandrasekaran. ECP SOLLVE: Validation and Verification Testsuite Status Update and Compiler Insight for OpenMP. DOI:10.1109/P3HPC56579.2022.0001 2022 IEEE/ACM International Workshop on Performance, Portability and Productivity in HPC (P3HPC)

- Jarmusch, A. M., Liu, A., Munley, C., Horta, D., Ravichandran, V., Denny, J., Chandrasekaran, S. (2022). Analysis of Validating and Verifying OpenACC Compilers 3.0 and Above, 2022 Workshop on Accelerator Programming Using Directives (WACCPD) DOI: 10.1109/WACCPD56842.2022.00006

- Kelling, J., Bastrakov, S., Debus, A., Kluge, T., Leinhauser, M., Pausch, R., Steiniger, K., Stephan, J., Widera, R., Young, J., Bussman, M., Chandrasekaran, S., and Juckeland, G. (2021). Challenges Port-

ing a C++ Template-Metaprogramming Abstraction Layer to Directive-based Offloading. arXiv preprint arXiv:2110.08650. (Under publication with WACCPD @ SC21, 2021)

- Josh Davis, Chris Daley, Swaroop Pophale, Thomas Huber, Sunita Chandrasekaran, Nicholas Wright (2020). Performance Assessment of OpenMP Compilers Targeting NVIDIA V100 GPUs. In the Seventh Workshop on Accelerator Programming Using Directives at SC20 (WACCPD'20). DOI pending, arXiv: https://arxiv.org/abs/2010.09454, November 2020.

- Millad Ghane, Sunita Chandrasekaran and Margaret S. Cheung. Towards a portable hierarchical view of distributed shared memory systems: Challenges and Solutions
  11th International Workshop on Programming Models and Applications for Multicores and Manycores (PMAM) https://doi.org/10.1145/3380536.3380542 pp. 1-10, March 2020.

- Millad Ghane, Sunita Chandrasekaran, and Margaret S. Cheung. Gecko: Hierarchical Distributed View of Heterogeneous Shared Memory Architectures
  10th International Workshop on Programming Models and Applications for Multicores and Manycores (PMAM), https://doi.org/10.1145/3303084.3309489 pp. 21-30, February 2019.

- Jose Monsalve Diaz*, Swaroop Pophale, Oscar Hernandez, David E. Bernholdt and Sunita Chandrasekaran. OpenMP 4.5 Validation and Verification Suite for Device Offload. 13th International Workshop on OpenMP (IWOMP), Volume 11128, pp. 82-95, September 2018.

- Kyle Friedline, Sunita Chandrasekaran, Graham Lopez and Oscar Hernandez. OpenACC 2.5 Validation Testsuite targeting multiple architectures. 2nd International Workshop on Performance Portable Programming Models for Accelerators (P3MA), Volume 10524, pp. 557-575, June 2017.

- Sergio Pena, Sunita Chandrasekaran and Lori Pollock. Exploring translation of OpenMP to OpenACC 2.5: Lessons Learned. 7th International Workshop on Accelerators and Hybrid Exascale Systems (AsHES) co-located with IPDPS 2017, pp. 673- 682, 2017.

- Michael Wolfe, Seyong Lee, Jungwon Kim, Xiaonan Tian, Rengan Xu, Sunita Chandrasekaran and Barbara Chapman. Implementing the OpenACC Data Model. 7th International Workshop on Accelerators and Hybrid Exascale Systems (AsHES) co-located with IPDPS 2017, pp. 662-672, May 2017.

- Robert Searles, Stephen Herbein, Sunita Chandrasekaran. A portable, high-level graph analytics framework targeting distributed, heterogeneous systems. 3rd International Workshop on Accelerator Programming Using Directives (WACCPD) co-located with SC16 DOI 10.1109/WACCPD.2016.012, pp. 79-88, November 2016.

- Suyang Zhu, Sunita Chandrasekaran, Peng Sun, Barbara Chapman, Tobias Schuele and Marcus Winter, Exploring Task Parallelism for Heterogeneous Systems Using Multicore Task Management API, 4th Workshop on Runtime and Operating Systems for the Many-core Era co-located with Europar, pp. 607-708, 2016.

- Peng Sun, Sunita Chandrasekaran, and Barbara Chapman. OpenMP-MCA: Leveraging Multiprocessor Embedded Systems using industry standards. In Proceedings of the 2015 IEEE International Parallel & Distributed Processing Symposium Workshops, (PLC) co-located with IPDPS, 10.1109/IPDPSW.2015.13, pp. 679-688, Hyderabad, India, 2015

- Guido Juckeland, William Brantley, Sunita Chandrasekaran, et al. SPEC ACCEL - A Standard Application Suite for Measuring Hardware Accelerator Performance. In International Workshop on Performance s Modeling, Benchmarking and Simulation of High Performance Computer Systems (PMBS) co-located with SC14, Volume 8966 of the series Lecture Notes in Computer Science, Springer Verlag, pp. 46-67, New Orleans, USA, 2014. *(Acceptance rate 26%) (Workshop level)*

- Rengan Xu, Maxime Hugues, Henri Calandra, Sunita Chandrasekaran and Barbara Chapman. Accelerating Kirchhoff Migration on GPU using Directives. In Proceedings of ACM SIGHPC, The first Workshop on Accelerator Programming using Directives (WACCPD 2014) co-located with SC14, pp. 37-46, New Orleans, USA, 2014

- Rengan Xu, Cheng Wang, Sunita Chandrasekaran, Barbara Chapman. An OpenACC 1.0 Validation Suite. In Proceedings of the 2014 IEEE Workshop on Multi-threaded Architectures and Applications(MTAAP) co-located with IPDPS, pp. 1407-1416, Phoenix, USA, 2014 (Workshop Level)

- Rengan Xu, Xiaonan Tian, Yonghong Yan, Sunita Chandrasekaran, Barbara M. Chapman. Reduction Operations in Parallel Loops for GPGPUs. In Proceedings of ACM, Programming Models and Applications on Multicores and Manycores (PMAM) co-located with PPoPP, pp. 10:10–10:20, Orlando, USA, 2014 (Workshop Level)

- Rengan Xu, Xiaonan Tian, Sunita Chandrasekaran, Yonghong Yan and Barbara Chapman. NAS Parallel Benchmarks on GPGPUs using a Directive-based Programming Model. In Proceedings of Springer Verlag, The 27th International Workshop on Languages and Compilers for Parallel Computing (LCPC), pp. 67-81, Oregon, USA, 2014

- Cheng Wang, Mauricio Araya, Sunita Chandrasekaran, Barbara Chapman, Detlef Hohl. Parallel Sparse FFT. In Proceedings of ACM, The 3rd Workshop on Irregular Applications: Architectures and Algorithms (IA$\hat{3}$), co-located with SC 2013, pp. 10:1–10:8, Colorado, USA, 2013

- Sayan Ghosh, Sunita Chandrasekaran, Barbara Chapman. Statistical Modeling of Power/Energy of Scientific Kernels on a Multi-GPU system. In Proceedings of IEEE, Third International Workshop on Power Measurement and Profiling (PMP) co-located with IGCC, pp.1-6, Virginia, USA, 2013 (Workshop Level)

- Cheng Wang, Sunita Chandrasekaran, Barbara Chapman, Jim Holt. libEOMP: a portable OpenMP runtime library based on MCA APIs for embedded systems. In Proceedings of ACM, International Workshop on Programming Models and Applications for Multicores and Manycore (PMAM) co- located with PPoPP, pp 83-92, New Orleans, USA, 2013

- Cheng Wang, v, Barbara Chapman. An OpenMP3.1 Validation testsuite. In Proceedings of IWOMP 2012, LNCS, Volume 7312/2012,p.237-249, Rome, Italy, 2012

- Rengan Xu,Sunita Chandrasekaran, Barbara Chapman, Christoph F. Eick. Directive-based Programming Models for Scientific Applications - A Comparison. In Proceedings of IEEE, Second International Workshop on Domain-Specific Languages and High-Level Frameworks for High Performance Computing (Wolfhpc) co-located with Supercomputing (SC), pp 1-9, Salt Lake City, USA, 2012

- Lei Huang, Eric Stotzer, Hangjun Yi, Barbara Chapman, Sunita Chandrasekaran. Parallelizing Ultrasound Image Processing using OpenMP on Multicore Embedded Systems. n Proceedings of 2012 IEEE Global High Tech Congress on Electronics (GHTCE), 131-138,
DOI: 10.1109/GHTCE.2012.6490139, Shenzen, China, 2012

- Sayan Ghosh, Sunita Chandrasekaran, Barbara Chapman. Energy Analysis of Parallel Scientific Kernels on Multiple GPUs. In Proceedings of IEEE Symposium on Application Accelerators in High Performance Computing (SAAHPC), p.54-63, Chicago , July 2012

- Sunita Chandrasekaran, Shilpa Shanbagh, Douglas. L. Maskell. A Dependency Graph based Methodology for Parallelizing HLL Applications on FPGA. In Proceedings of the 18th ACM/SIGDA International Symposium on Field-Programmable Gate Arrays Proceedings (FPGA), Monterey, USA, 2010

- Sunita Chandrasekaran, Oscar Hernandez, Douglas Maskell, Barbara Chapman, Van Bui. Compilation and Parallelization Techniques with Tool Support to realize Sequence Alignment Algorithm on FPGA and

Multicore. IEEE Int. Conf. on High Performance Computing (HiPC), Goa, India, 2007

Invited Technical Reports Not Published Elsewhere

- Mauricio Ferrato, Erin Crowgey, Sunita Chandrasekaran. Developing and Accelerating Predictive Models for Predicting Relapse of Pediatric Oncology patients using Smart Cyberinfrastructure.
  By Invitation-only NSF Workshop: Developing a Roadmap towards the Next Generation of Smart Cyberinfrastructure, Feb 25-27, Seattle, 2020.

- Millad Ghane, Sunita Chandrasekaran, Margaret S. Cheung. Assessing Performance Implications of Deep Copy Operations via Microbenchmarking. arXiv preprint arXiv:1906.01128, June, 2019

- Sunita Chandrasekaran. Extreme Heterogeneity for Sn Transport Codes.
  By Invitation-only Big Data and Extreme-Scale Computing (BDEC) Meeting, Indiana University, November 28-30, 2018

- Sunita Chandrasekaran. Development of a parallel algorithm for whole genome alignment for rapid delivery of personalized genomics.
  By Invitation-only Big Data and Extreme-Scale Computing (BDEC) Meeting, Indiana University, November 28-30, 2018

Technical Report

- Ritu Arora, Texas Advanced Computing Center (Co-Chair) Xiaosong Li, University of Washington (Co-Chair) Bonnie Hurwitz, University of Arizona (Steering Committee Member) Daniel Fay, Microsoft (Steering Committee Member) Dhabaleswar K. Panda, The Ohio State University (Steering Committee Member) Edward Valeev, Virginia Tech University (Steering Committee Member) Shaowen Wang, University of Illinois (Steering Committee Member) Shirley Moore, Oak Ridge National Lab (Steering Committee Member) Sunita Chandrasekaran, University of Delaware (Steering Committee Member) Ting Cao, University of Washington (Steering Committee Member).
  Future Directions of the Cyberinfrastructure for Sustained Scientific Innovation (CSSI) Program
  This report was submitted in April 2020 to the National Science Foundation (NSF).

  https://arxiv.org/pdf/2010.15584.pdf

- Robert Henschel, Junjie Li, Rudolf Eigenmann, Sunita Chandrasekaran. Explore True Performance Using Application Benchmark for the Next Generation HPC Systems: First NSF EAGER SPEC HPG Workshop Report. September 2019
  https://scholarworks.iu.edu/dspace/handle/2022/25344
  DOI= 10.5967/jmkd-6p64

Non-proceedings poster

- Mauricio H. Ferrato, Erin L. Crowgey, Sunita Chandrasekaran, Proposing a Machine Learning Framework for Classification of Patient Cohorts Using Genomics Data, AMIA, November 2020

- Robert Searles, Sunita Chandrasekaran, Abstractions and Directives for Adapting Wavefront Algorithms to Future Architectures
  GPU Technology Conference (GTC), March 17-21, 2019. CA. USA

- Eric Wright and Mauricio Ferrato, Sunita Chandrasekaran, Accelerating Chemical Shift Prediction for Large-scale Biomolecular Modeling.
  GPU Technology Conference (GTC), March 17-21, 2019. CA. USA

- Thomas Huber, Robert Henschel, Junjie Li, Sunita Chandrasekaran. Impact of Virtualization and Containers on Application Performance and Energy Consumption.
  PEARC, July 22-26, 2018, 2018. PA. USA

- Joel Bricker, Sunita Chandrasekaran, OpenACC Enabled Benchmark Suite on Intel Ivy Bridge.
  GPU Technology Conference (GTC), March 21-24, 2016. CA. USA

Software Packages

Group GitHub: https://crpl.cis.udel.edu/github/

- **OpenMP Validation & Verification Testsuite** - This project creates functional test codes for OpenMP offloading features (Version 4.0 and onwards). The test codes are tested against more than several versions of C/C++ and Fortran compilers including LLVM, GNU, ICC, XLC, Clang and Clang AWOMP on various systems including Summit in the US and the supercomputer in Pawsey Supercomputing Center in Australia, cluster in RWTH Aachen in Germany among others.
  Project Period: 2017 - present
  URL: https://crpl.cis.udel.edu/ompvvsollve/

- **OpenACC Validation & Verification Testsuite** - This project creates functional, orphan and cross test codes for OpenACC programming model (Version 1.0 and till the latest version 3.0). The test codes are tested against PGI and GNU compilers on various systems including Summit in the US and PizDaint in Switzerland.
  Project Period: 2016 - present
  URL: https://github.com/OpenACCUserGroup/OpenACCV-V

- **Abstractions for Easy Portability** - This project is work in progress with a goal to create abstractions to break down applications into tasks, create task graphs and create a balanced workload between fine and coarse-grained tasks.
  Project Period: 2019 - present
  URL: https://github.com/fabianmcg/wave-dag

- **Predictive Modeling for SCD synthetic dataset** - This repository contains code and workflow in order to build predictive models out of synthetic dataset created for Sickle Cell disease for classification of patient cohorts.
  Project Period: 2017 - present
  URL: 0

- **Minisweep** - This repository contains the OpenACC port for the mini-application Minisweep. This is a nuclear physics code of radiation transport algorithm. The goal of this project is to develop a performance yet portable minisweep software to be used for acceptance testing of large scale systems like Summit. This code has also been integrated into the on-going sPEC HPG HPC2020 benchmarking effort.
  Project Period: 2017 - 2019
  URL: https://github.com/UD-CRPL/minisweep

- **Accelerating PPM_One** - Development of an accelerated version of the prediction of chemical shift of protein structures on GPUs using OpenACC on GPUs. This is the first directive-based version of the

software that is available.
Project Period: 2017-2020
URL: https://github.com/UD-CRPL/ppm_one

- **High-Level Graph Analytics using MapReduce** - This repository contains software developed using a portable, high-level framework using a popular MapReduce framework, Apache Spark, in conjunction with CUDA and OpenCL to take advantage of automatic data distribution and specialized hardware distributed across systems.
Project Period: 2016-2017 URL: https://github.com/UD-CRPL/WACCPD-2016

- **Translation of OpenMP to OpenACC 2.5** - This repository contains experimental results using NAS parallel benchmark and SHOC codes to demonstrate the translation and its impact from OpenMP model to OpenACC. Project Period: 2016-2017
URL: https://github.com/UD-CRPL/ASHES-17

Tutorials Presented at Conferences

- Tutorial on Towards Comprehensive System Comparison: Using the SPEC HPG Benchmarks for Better Analysis, Evaluation, and Procurement of Next-Generation HPC Systems given at:

  - Half-day Tutorial at The International Conference for High Performance Computing, Networking, Storage, and Analysis, (SC20) Virtual, Nov 2020

  - Practice and Experience in Advanced Research Computing (PEARC'19), Chicago, IL, USA

  - Half-day Tutorial at ICS 2019: International Conference on Supercomputing, (ICS'18), Phoenix, AZ, USA

  - Half-day Tutorial at ISC 2019: International Supercomputing Conference (ISC'18), Germany, Frankfurt

  - Half-day Tutorial at The International Conference for High Performance Computing, Networking, Storage, and Analysis, (SC'15), Austin, TX, USA

Invited Technical Talks

2023

- Leveraging Exascale Computing Resources for Particle-In-Cell on GPU (PIConGPU), SIAM CSE 2023

- Leveraging Exascale Computing Resources for Particle-In-Cell on GPU (PIConGPU), ICL, 2023

2022

- Keynote at IPDRM Workshop @ SC22 Challenges and success stories migrating software and applications to Frontier, November 2022

- ECP SOLLVE at the DOE booth SC22

- The Race to Frontier, Stony Brook University, Sept 2022

- Preparing Effective Grant Proposals – University resources, Early Career Program at SC22

- The good, bad and the ugly with PIConGPU on Frontier, talk at AMD

- Preparing the PIConGPU for the next-generation computing systems, BNL, Jan 2022

2021 (Virtual talks)

- Experience with porting and scaling codes on AMD GPUs, first PaCER Conference – P'con, Dec 2021

- How Ready Are We to Use the First Exascale Supercomputer, Frontier?, DOE ECP Booth, November 2021

- Best practices for a productive (yet performance) software development, 2021 Europe ACM Summer School, Aug 2021

- An HPC Journey – Porting a Solar Physics Code to Large Scale Systems, The Society of HPC Professionals, July 2021

- Ten ways to build a productive (yet a performant) software, Supercomputing Frontiers Europe, July 2021

- Programming Frontier, challenges and solutions, OLCF User Group meeting, June 2021

- Present and the future of Accelerated Computing Programming Approaches, Panelist for NVIDIA GPU Technology Conference (GTC), March 2021

- Exascale Simulations for the Next Generation of Plasma Accelerators with PIconGPU, SIAM CSE 2021, Feb 2021

- Preparing to program the world's fastest supercomputer, NSF-funded DARWIN system Symposium, UDEL, Feb 2021

2020 (Virtual talks)

- Evolution of a Project, Talk at the Students at the Supercomputing Conference (SC) program, Nov 2020

- Hierarchical Parallelism for Exascale Computing (HiPar20 at Supercomputing Conference (SC), Panelist, Nov, 2020

- Developing Software for today's and tomorrow's platform - fun or a nightmare, Invited talk by Prof. Michela Taufer at the UTK Seminar Series, UTK, Oct 2020

- Research Activities at CRPL. Hierarchical Computations on Manycore Architecture Group at KAUST, Saudi Arabia, Aug 2020

- Preparing Software Stack for the Next Generation Systems - An opportunity or a nightmare?, Thirteenth International Workshop on Parallel Programming Models and Systems Software for High-End Computing (P2S2) in conjunction with ICPP 2020, Aug 2020

- Scientific Software Productivity - Case Studies, Challenges, Opportunities and Potential Solutions, 2020 Collegeville Workshop on Scientific Software: Panel on productivity definitions and challenges, July 2020

- ECP SOLLVE, OpenMP Validation and Verification Effort, OpenPOWER Academia and Research Webinar, June 2020

- GPUs for Science Day 2020, NERSC (National Energy Research Scientific Computing Center), Lawrence Berkeley National Laboratory in Berkeley, California, June 2020

- Training and Best Practices to Develop Portable Yet Performant Code, Seattle, February, Society for Industrial and Applied Mathematics, Parallel Processing (SIAM PP), Seattle, USA, Feb 2020 (In person)

2019

- Running PIConGPU on Summit. CAAR: Preparing PIConGPU for Frontier at ORNL, 4th OpenPOWER Academic and Research Workshop, Denver, USA, Supercompuing Conference (SC), Nov 2019

- OpenMP 4.5 Validation and Verification Testsuite, 4th OpenPOWER Academic and Research Workshop, November, Denver, USA, Supercompuing Conference (SC), Nov 2019

- Applying directives to port MURaM code to heterogeneous systems, ASTRONUM, Paris, France, July, 2019

- Development of a parallel algorithm for WGS alignment for rapid delivery of personalized genomics, PASC Minisymposium, Zurich, Switzerland, June 2019

- Impact of parallel programming models on interdisciplinary scientific research, University of Basel, Basel, Switzerland, June 2019

- OpenACC-Based GPU Acceleration of Chemical Shift Prediction, GPU Technology Conference (GTC), Invited featured speaker, CA, USA, Mar 2019

- Porting MURaM (Max Planck University of Chicago Radiative MHD) to GPUs Using OpenACC, GPU Technology Conference (GTC), Invited speaker, CA, USA, March 2019

- Acceleration of Prediction of Chemical Shift Structures, SIAM CSE, Spokane, USA, Feb, 2019

2018

- Development of a parallel algorithm for whole genome alignment for rapid delivery of personalized genomics. NSF-funded International workshop Big Data and Extreme-Scale Computing (BDEC) Meeting, Indiana University, Bloomington, USA, Nov, 2018

- 3P to Science using OpenACC: Performance, Productivity, and Portability. NVIDIA Booth at the SC showfloor. Dallas, Nov, SC18

  Swiss Army Programming: Performance and Portability from Modern Tools. Dallas, Nov, SC18

- Using the Parallel Programming Model, OpenACC, to do More Science and Less Programming, Bootcamp, Princeton University, NJ, USA , USA, Oct 2018

- HPC-as-a-service to Domain Scientists, PASC Minisymposium, Basel, Switzerland, July, 2018

- Opportunities and Challenges Migrating Scientific Code to Accelerators, National Center for Atmospheric Research (NCAR), Boulder, USA, June, 2018

- Achieving Performance While Preserving Portability for NGS Application, Society of Industrial Mathematics, Parallel Processing (SIAM PP), Tokyo, Japan, Mar 2018

- Adapting Minisweep, a Proxy Application, on Heterogeneous Systems Using OpenACC Directives, Featured Speaker, Graphic Technology Conference (GTC), CA, USA, Mar 2018

- Path forward for softwarization to tackle evolving hardware, SPIE, Orlando, USA, Apr 2018

2017

- Parallelization and Acceleration of the Nuclear Reactor mini-app Minisweep on an OpenPOWER platform, 2nd OpenPOWER Academia Discussion Group Workshop, Supercomputing Conference (SC), Denver, USA, Nov 2017

- Building Your Academic Professional Network. Grace Hopper Celebrations, Houston, USA, Oct, 2017

- Using OpenACC for NGS Techniques to Create a Portable and Easy-to-Use Code Base. GPU Technology Conference (GTC). CA, USA, Mar 2017

- Exploring on-Node Programming Models for Irregular Algorithms. SIAM CSE, Atlanta, USA, Feb, 2017

- Programmer's perspective on evolving hardware, Challenges and Success Stories, RWTH Aachen, Germany, Feb 2017

2016 and before

- Hackathons, Best Practices in HPC Training, Workshop co-located at SC16, Salt Lake City, USA, November, 2016

- OpenACC status and feedback, Birds of a Feather (BoF): GPU Technology Conference (GTC), San Jose, USA, May, 2016

- Industry Standards for Programming Multicore Systems: Way to go!, Multicore Devcon Conference (MDC), California, Santa Clara, May, 2014

- Exascale will soon be here, how prepared are we, Argonne National Lab, Chicago, USA, Apr, 2014

- Simplifying Heterogeneous Multicore Programming Using Industry Standards. SIAM PP, Portland, Feb, 2014

- Open Registry for Accelerated Computing, Many-Core and Reconfigurable Supercomputing Conference (MRSC), Bristol, UK, 2011

  OpenACC API: User Experience, Vendor Reaction, Relevance, and Roadmap. Birds of Feather Speaker at SC16, Salt Lake City, Nov, 2016

Professional Activities - External

Special Content Editor

- Special Issue Editor for Future Generation Computing Systems (FGCS) 2021-2023

Journal Guest Co-Editorship

- Software: Practice and Experience. Special Issue on New Trends in High Performance Computing: Software Systems and Applications. Co-edited with Min Si, Lena Oden, Jidong Zhai, September 2022

- Springer, Communications in Computer and Information (CCIS). Book on Tools and Techniques for High Performance Computing. Selected papers from SC19 Workshop. Co-edited with Dr. Guido Juckeland, ISBN 978-3-030-44728-1. April 2020

- Springer, Lecture Notes in Computer Science (LNCS). Book on Accelerator Programming Using Directives. Selected papers from SC18 Workshop on Accelerators using Directives, co-located with SC18. Co-edited with Dr. Guido Juckeland, ISBN 978-3-030-12274-4. February 2019

- Springer, Lecture Notes in Computer Science (LNCS). Book on Accelerator Programming Using Directives. Selected papers from SC18 Workshop on Accelerators using Directives, co-located with SC17. Co-edited with Dr. Guido Juckeland, ISBN 978-3-319-74896-2. February 2017

- Journal of BMC Bioinformatics, Topic: Computational Approaches for Cancer. https://doi.org/10.1186/s12859-018-2502-x, 19:487, Co-edited with Dr. Eric Stahlberg, December 2018

- Journal of Parallel Computing (PARCO). Application for Heterogeneous Computing Era. Volume 77, Co-edited with Dr. Antonio Pena, https://doi.org/10.1016/j.parco.2018.06.002, September 2018

- Journal of Parallel Computing (PARCO). Topics on Heterogeneous Computing Era. Volume 68, Co-edited with Dr. Antonio Pena, https://doi.org/10.1016/j.parco.2017.08.001, October 2017

- Inderscience Publishers. Journal on Novel Strategies for Programming Accelerators. Co-edited with Dr. Guido Juckeland http://www.inderscience.com/info/ingeneral/cfp.php?id=3437, December 2017

- Inderscience Publishers. Journal on High-level Programming Approaches for Accelerators. Co-edited with Dr. Guido Juckeland http://www.inderscience.com/info/ingeneral/cfp.php?id=3438, December 2017

- Journal of Scientific Programming. Programming Models, Languages, and Compilers for Manycore and Heterogeneous Architectures. Volume 2015, Article ID 376317, http://dx.doi.org/10.1155/2015/376317, 2015

External Scientific Advisory Board

- NCAR CISL Advisory Panel Member, 2022

- Advisory Editorial Board - Software: Practice and Experience (SPE), 2022

- Organizing Committee, SIAM Parallel Processing Conference 2022

- European H2020 project: EPEEC (European joint Effort toward a Highly Productive Programming Environment for Heterogeneous Exascale Computing) Scientific-Industrial Advisory Board (SAIB), Barcelona Supercomputing Center, Spain, 2018-2020

Proposal Reviewer, US and International

- DOE Presidential Early Career Awards for Scientists and Engineers (PECASE), May 2021

- NSF Review Panel, 2016, 2017, 2018, 2019, 2020, 2022

- Natural Sciences and Engineering Research Council of Canada, Canada, Review Panel, 2017

- DFG (German Research Foundation), Germany, Review Panel, 2017

Technical Specification and Book Reviewer

- Computer Systems: An Embedded Approach, Textbook by Ian McLoughlin, September, 2018

- Multicore Association (MCA)' Task Management Standard API (MTAPI) and Software-hardware Interface for multi-many-core,(SHIM), 2013-2015

Editorial Affiliations

- Special Content Editor, Future Generation Computer Systems, 2021 - 2023

- IEEE Transactions on Parallel and Distributed Systems, Associate Editor, 2020 - present

- Elsevier's Future Generation Computer Systems, Associate Editor, 2020 - 2021

- Journal of Parallel Computing (PARCO) - Subject Area Editor, 2019 - 2021

- Journal of Parallel and Distributed Computing (JPDC) - Associate Editor, 2019 - 2021

Steering Committees

- NSF Workshop on Future Directios of the CSSI program, Steering Committee Role, 2019

- Women in HPC, SC, Steering Committee Role, 2016-2018

- Women in HPC, ISC, Steering Committee Role, 2016-2018

Chair and Co-Chair - Conferences/Workshops/Symposiums/Scholarships

- Technical Program Co-chair IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, (CCGrid), 2023

- IEEE Cluster Student Travel Liaison chair, 2020-2022

- Vice Chair, Interdisciplinary track, International Parallel & Distributed Processing Symposium (IPDPS), 2022

- Program Co-chair The 34th International Workshop on Languages and Compilers for Parallel Computing (LCPC), 2021

- Track Leader of the Invited Speaker Program, ISC 2020/2021

- Technical Program Co-Chair, PASC 2020

- Early Career Program, Vice Chair, SC 2020

- International Workshop on Accelerators and Hybrid Exascale Systems (AsHES) co-located with IPDPS, General Chair, 2018, 2019

- Research Posters Chair, Interational Supercomputing Conference (ISC), 2019

- Workshops Chair, Supercompuing Conference (SC19), 2019

- Technical Program Co-Chair, The Platform for Advanced Scientific Computing (PASC), 2019

- Research Posters Vice-Chair, Interational Supercomputing Conference (ISC), 2018

- ACM Intel Leadership fellows, SC 2018

- Workshop Co-chair, 1st to 4th International Workshop on Performance Portable Programming Models for Accelerators (P3̂MA) co-located with ISC, 2016 - 2019

- Workshop Co-Chair, 1st - 5th Workshop on Accelerator Programming Using Directives (WAACPD), co-located with SC conference, 2014-2018

- General Chair, 7th and 8th International Workshop on Accelerators and Hybrid Exascale Systems (AsHES) co-located with IPDPS, 2017, 2018

- Workshop Co-Chair of the 1 - 3th HPC Applications in Precision Medicine co-located with ISC, 2017-2019

- Doctoral Showcase Chair, SC17

- Workshop Co-chair, 4th-6th International Workshop on Accelerators and Hybrid Exascale Systems (AsHES) co-located with International Parallel & Distributed Processing Symposium (IPDPS), 2014-2016

- Vice-Chair of Software Track, International Parallel & Distributed Processing Symposium (IPDPS), 2017

- Track-Chair of Programming Models and Systems Software, International Supercomputing Conference (ISC), 2017

- Poster and Research Demo Chair, 15th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, (CCGrid), 2015

- Workshop Chair, Programming Models, Languages and Compilers Workshop for Manycore and Heterogeneous Architectures (PLC), co-located with , International Parallel & Distributed Processing Symposium (IPDPS),2015

- Workshop Chair, 1st and end Workshop on Directives and Tools for Accelerators: A Seismic Programming Shift, 2014-2015

Technical Program Committee - Conferences/Workshops/Symposiums/Scholarships

- IEEE HiCoMB, 2022

- IEEE CCGrid, 2022

- IEEE Cluster 2021

- IEEE International Workshop on OpenMP 2021

- International Supercomputing Conference, 2021

- International Parallel & Distributed Processing Symposium (IPDPS), 2021

- Supercomputing Conference, 2021

- IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, 2021

- Supercomputing Conference, SC 2020

- International Conference of Supercoming, ICS, 2020

- International Supercomputing Conference (ISC), 2019

- Workshops for IPDPS 2019

- SC Conference, 2018

- DOE Leadership Computing | INCITE Program, 2018

- International Parallel & Distributed Processing Symposium (IPDPS), 2018

- IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, (CCGrid),2018

- International Workshop on FPGAs for Software Programmers, 2018

- 3rd Workshop on Open Source Supercomputing, 2018

- Doctoral Showcase Chair, SC17

- International Conference on Parallel Processing (ICPP), 2017

- IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, (CCGrid) (Track: "Programming Models and Runtime Systems"), 2017

- SC conference 2016

- Doctoral Showcase, Birds of Feather (Algorithms Track), Workshop on Computing and Cancer, Workshops on Energy Efficient Supercomputing (E2SC)

- International Workshop on FPGAs for Software Programmers (FSP), 2016

- International European Conference on Parallel and Distributed Computing (Euro-Par), 2016

- International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD), 2016

- International Conference on Network and Parallel Computing, 2016 International Conference on Parallel Processing (ICPP), 2016

- DOD Workshop on Mission-Critial big data analytics, 2016

- First International Workshop on Open POWER for HPC (IWOPH) co-located with ISC, 2016 IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, (CCGrid), 2014-2016

- 30th IEEE International Parallel & Distributed Processing Symposium, PhD Panel on research and career planning and PhD Poster Judging Committee, 2015

- SC conference, 2015

- Doctoral Showcase Committee, Technical Program Committee (Performance Track), 2016

- IEEE Cluster, 2014

- 8th Workshop on General Purpose Processing using GPUs (GPGPU-8), 2014

- 22nd European Signal Processing Conference (EUROSIP), 2014

- International Symposium on Integrated Circuits (ISIC), 2014

- Workshop on Multicore and GPU Programming Models, Languages and Compilers, PLC, co-located with IPDPS, 2013- 2014

- International Joint Conference on Neural Networks (IJCNN), 2015

- The International Conference for High Performance Computing, Networking, Storage and Analysis (SC) 2012, 2013

- ACM Student Research Competition, Poster Committee

- 50th Design Automation Conference (DAC) (External Reviewer), 2012

Adhoc Journal Reviewer

- Journal of Parallel and Distributed Computing (JPDC)

- IEEE Transactions on Cloud Computing (TCC)

- International Journal of Parallel Programming (IJPP)

- Transactions on Architecture and Code Optimization (TACO)

- Elsevier Parallel Computing (PARCO)

- Journal of Supercomputing (SUPE)

- Transactions on Software Engineering (TSE)

- IEEE Transactions on Parallel Distributed Systems (TPDS)

- Concurrency and Computation: Practice and Experience (CCPE)

- Elsevier Future Generation Computer Systems (FGCS)

- IEEE/ACM Transactions on Computational Biology and Bioinformatics(TCBB)

Training Students and Professionals to use GPUs: Hackathons

- ECP OpenMP Virtual Hackathons, 2021-

- GPU Programming Hackathon Training in collaboration with Oak Ridge National Laboratory, Venue: Brookhaven National Laboratory (BNL), NY, USA, June 2017

- GPU Hackathons and Workshops-based training in collaboration with Oak Ridge National Lab and NVIDIA. Venue: University of Delaware (UDEL), Newark, DE, May 2016

- Hands-on training. Introduction to GPGPU Architecture and OpenACC. Center for Advanced Computing and Data Systems (CACDS). University of Houston (UH), Houston, TX, April 2014

Professional Development

- Eastern Nook Promotion and Tenure Workshop, New Jersey, 2019

- Write Winning Grant Proposals Workshop,Virginia, 2017

- CRA Career Mentoring Workshop, Virginia, USA, 2016

- NSF CISE CAREER Workshop, Virginia, 2016

Podcast

- Episode 85: Sunita Chandrasekaran on Teaching Supercomputing and Leading the ECP SOLLVE Project
https://tinyurl.com/22fvy663

Professional Activities - UDEL

University

- University, Cost Recovery Working Group, Spring 2020
- Faculty Peer Observation Program (FPOP), Spring 2017 - Spring 2019

College of Engineering

- Dean's Junior Faculty Advisory Council, Spring 2018 - Spring 2019
- Search committee for digital content specialist, Summer 2016

Department of Computer & Information SCiences

- CIS Bylaws committee, Fall 2022, Spring 2023
- CIS Chair Search Committee, Spring 2021 - Spring 2022
- SPICE Committee, Fall 2020 - Spring 2022 item Alumni Committee, Fall 2021 - Spring 2022
- Executive Committee, Fall 2019 - Spring 2020
- Marketing Committee, Fall 2018 - Fall 2019
- Faculty Search Committee - High Performance Computing, Fall 2018 - Spring 2019
- Search Committee - Teaching (Continuing), Fall 2016 - Spring 2017
- Publicity Committee, Fall 2016 - Spring 2017
- Faculty Search Committee - Networking, Fall 2016 - Spring 2016

Professional Affiliations

- ACM, IEEE, OpenMP, OpenACC, SPEC