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EDUCATION

Ph.D. – Computer Science, University of Tennessee, Knoxville, Tennessee, U.S.A., **1998**

Dissertation: *Stochastic models for performance analyses of iterative algorithms in distributed environments*

Advisors: Prof. Jack J. Dongarra and Prof. Michael G. Thomason

M.S. – Diplôme d'Études Approfondies (DEA) in Parallel Architectures and Applied Mathematics, National Polytechnic Institute of Toulouse, France, **1994**.

Thesis: *A version of PVM for shared- and virtually shared-memory supercomputers*

Advisor: Prof. Michel Daydé

B.S. – Diplôme d'Ingénieur in Computer Science and Applied Mathematics, Ecole Nationale Supérieure d'Electronique, d'Electrotechnique, d'Informatique et d'Hydraulique de Toulouse (ENSEEIH), Toulouse, France, **1993**.

RESEARCH INTERESTS

High performance computing, parallel and distributed computing, parallel application scheduling, simulation of distributed applications and platforms.

PROFESSIONAL EXPERIENCE

07/15 - present: Professor, Information and Computer Sciences Department, University of Hawai'i at Mānoa.

04/12 - 03/18: Visiting Professor, National Institute of Informatics, Tokyo, Japan.

07/07 - 06/15: Associate Professor, Information and Computer Sciences Department, University of Hawai'i at Mānoa.

08/05 - 06/07: Assistant Professor, Information and Computer Sciences Department, University of Hawai'i at Mānoa.

07/04 - 07/05: Associate Research Scientist, San Diego Supercomputer Center, University of California, San Diego.

07/02 - 07/05: Adjunct Assistant Professor, Department of Computer Science and Engineering, University of California, San Diego.

07/01 - 06/04: Assistant Research Scientist, San Diego Supercomputer Center, University of California San Diego.

07/01 - 07/05: Director of the Grid Research And Innovation Laboratory (GRAIL), University of

California San Diego.

- 12/98 - 06/01:** Assistant Project Scientist, Department of Computer Science and Engineering, University of California, San Diego.
- 03/98 - 11/98:** Postdoctoral Research Associate, Computer Science Department, University of Tennessee, Knoxville.
- 01/95 - 02/98:** Graduate Research Assistant, Computer Science Department, University of Tennessee, Knoxville.
- 11/93 - 11/94:** Computer Science Advisor, French Ministry of Defense (DGA), Paris, France.
- 09/92 - 10/93:** Graduate Research Assistant, Computer Science Research Institute of Toulouse (IRIT), Toulouse, France.

PUBLICATIONS

Journal Articles

62. *An Exploration of Online-simulation-driven Portfolio Scheduling in Workflow Management Systems*, J. McDonald, J. Dobbs, Y. C. Wong, R. Ferreira da Silva, H. Casanova, *Future Generation Computer Systems (FGCS)*, to appear, **2024**.
61. *Automated Generation of Scientific Workflow Generators with WfChef*, T. Coleman, H. Casanova, R. Ferreira da Silva, *Future Generation Computer Systems (FGCS)*, 147, 16–29, **2023**.
60. *Beyond Binary Search: Parallel In-place Construction of Implicit Search Tree Layouts*, K. Berney, H. Casanova, B. Karsin, N. Sitchinava, *IEEE Transactions on Computers (TC)*, 71(5), 1104–1116, **2022**.
59. *WfCommons: A Framework for Enabling Scientific Workflow Research and Development*, T. Coleman, H. Casanova, L. Pottier, M. Kaushik, E. Deelman, R. Ferreira da Silva, *Future Generation Computer Systems (FGCS)*, 128, 16–27, **2021**.
58. *Teaching Parallel and Distributed Computing Concepts in Simulation with WRENCH*, H. Casanova, R. Tanaka, W. Koch, R. Ferreira da Silva, *Journal of Parallel and Distributed Computing (JPDC)*, 156, 53–63, **2021**.
56. *Characterizing, Modeling, and Accurately Simulating Power and Energy Consumption of I/O-intensive Scientific Workflows*, R. Ferreira da Silva, H. Casanova, A.-C. Orgerie, R. Tanaka, E. Deelman F. Suter, *Journal of Computational Science (JOCS)*, 44, **2020**.
55. *Developing Accurate and Scalable Simulators of Production Workflow Management Systems with WRENCH*, H. Casanova, R. Ferreira da Silva, R. Tanaka, S. Pandey, G. Jethwani, W. Koch, S. Albrecht, J. Oeth, F. Suter, *Future Generation Computer Systems (FGCS)*, 112, 162–175, **2020**.
54. *MILP Formulations for Spatio-Temporal Thermal-Aware Scheduling in Cloud and HPC Datacenters*, J.-M. Pierson, P. Stolf, H. Sun, H. Casanova, in *Cluster Computing*, **2019**.
53. *An Efficient Algorithm for the 1D Total Visibility-Index Problem*, P. Afshani, M. de Berg, H. Casanova, B. Karsin, C. Lambrechts, N. Sitchinava, C. Tsirogiannis, in *Journal of Experimental Algorithmics*, 23(2.3), 1–23, **2018**.
52. *Checkpointing Workflows for Fail-Stop Errors*, L. Han, L.-C. Canon, H. Casanova, Y. Robert, F. Vivien, in *IEEE Transactions on Computers (TC)*, 67(8), 1105–1120, **2018**.
51. *Computing the expected makespan of task graphs in the presence of silent errors*, J. Herrmann,

- Y. Robert, H. Casanova, in *Parallel Computing*, 75, 41–60, **2018**.
50. *Checkpointing Strategies for Scheduling Computational Workflows*, G. Aupy, A. Benoit, H. Casanova, Y. Robert, in *International Journal of Networking and Computing*, 6(1), 2–26, **2016**.
 49. *Distance Threshold Similarity Searches: Efficient Trajectory Indexing on the GPU*, M. Gowanlock, H. Casanova, in *IEEE Transactions on Parallel and Distributed Systems*, 27(9), 2533–2545, **2016**.
 48. *On the Impact of Process Replication on Executions of Large-Scale Parallel Applications with Coordinated Checkpointing*, H. Casanova, Y. Robert, F. Vivien, D. Zaidouni, in *Future Generation Computer Systems*, 51, 7–19, **2015**.
 47. *Toward More Scalable Off-Line Simulations of MPI Applications*, H. Casanova, A. Gupta, F. Suter, in *Parallel Processing Letters*, 25(3), **2015**.
 46. *Simulation of MPI Applications with Time-Independent Traces*, F. Deprez, S. Markomanolis, F. Suter, H. Casanova, in *Concurrency and Computation: Practice and Experience*, 27(5), 1145–1168, **2015**.
 45. *Selecting Linear Algebra Kernel Composition Using Response Time Prediction*, A. Hurault, K. Baek, H. Casanova, in *Software: Practice and Experience*, 45(12), 1659–1676, **2015**.
 44. *In-Memory Distance Threshold Similarity Searches on Moving Object Trajectories*, M. Gowanlock, H. Casanova, in *International Journal On Advances in Software*, 7 (3-4), 617–631 **2014**.
 43. *Swap-and-randomize: A Method for Building Low-latency HPC Interconnects*, I. Fujiwara, M. Koibuchi, H. Matsutani, H. Casanova, in *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, 26(7), 2051–2060, **2014**.
 42. *Versatile, Scalable, and Accurate Simulation of Distributed Applications and Platforms*, H. Casanova, A. Giersch, A. Legrand, M. Quinson, F. Suter, in *Journal of Parallel and Distributed Computing*, 75(10), 2899–2917, **2014**.
 41. *Mapping Applications on Volatile Resources*, H. Casanova, F. Dufossé, Y. Robert, F. Vivien, in *International Journal of High Performance Computing Applications (IJHPCA)*, 29(1), 73–91, **2014**.
 40. *Using group replication for resilience on exascale systems*, M. Bougeret, H. Casanova, Y. Robert, F. Vivien, D. Zaidouni, in *International journal of High Performance Computing Applications (IJHPCA)*, 28(2), 210–224, **2014**.
 39. *On the Validity of Flow-level TCP Network Models for Grid and Cloud Simulations*, P. Velho, L. Mello Schnorr, H. Casanova, A. Legrand, in *ACM Transactions on Modeling and Computer Simulation (TOMACS)*, 23(4), **2013**.
 38. *Energy-Aware Service Allocation*, D. Borgetto, H. Casanova, G. Da Costa, J.M. Pierson, in *Future Generation Computer Systems (FGCS)*, 28(5), 769–779, **2012**.
 37. *Dynamic Fractional Resource Scheduling vs. Batch Scheduling*, M. Stillwell, F. Vivien, H. Casanova, in *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, 23(3), 521–529, **2012**.
 36. *Preventive Migration vs. Preventive Checkpointing for Extreme Scale Supercomputers*, F. Cappello, H. Casanova, Y. Robert, in *Parallel Processing Letters*, 21(2), 111–132, **2011**.
 35. *Resource Allocation for Multiple Concurrent In-network Stream-processing Applications*, A. Benoit, H. Casanova, V. Rehn-Sonigo, Y. Robert, in *Parallel Computing (ParCo)*, 30, 331–

348, **2011**.

34. *On Cluster Resource Allocation for Multiple Parallel Task Graphs*, H. Casanova, F. Desprez, F. Suter, in the *Journal of Parallel and Distributed Computing (JPDC)*, 70(12), 1193–1203, **2010**.
33. *Resource Allocation Algorithms for Virtualized Service Hosting Platforms*, M. Stillwell, D. Schanzenbach, F. Vivien, H. Casanova, in the *Journal of Parallel and Distributed Computing (JPDC)*, 70(9), 962–974, **2010**.
32. *Resource Allocation Strategies for Constructive In-Network Stream Processing*, A. Benoit, V. Rhen-Sonigo, Y. Robert, H. Casanova, in the *International Journal of Foundations of Computer Science (IJFCS)*, 22(3), 621–638, **2010**.
31. *Characterizing Fault Tolerance in Genetic Programming*, D. Lombraña González, F. Fernández de Vega, H. Casanova, in the *Journal of Future Generation Computer Systems (FGCS)*, 26, 847–856, **2010**.
30. *Scheduling Mixed-Parallel Applications with Advance Reservations*, K. Aida, H. Casanova, in the *Cluster Computing Journal*, 12(2), 205–220, **2009**.
29. *Scheduling Parallel Task Graphs on (Almost) Homogeneous Multi-cluster Platforms*, P.-F. Dutoit, T. N'takpé, F. Suter, H. Casanova, in *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, 20(7), 940–952, **2009**.
28. *Scheduling Task Parallel Applications for Rapid Application Turnaround on Enterprise Desktop Grids*, D. Kondo, A. Chien, H. Casanova, in the *Journal of Grid Computing*, 5(4), 379–405, **2007**.
27. *Benefits and Drawbacks of Redundant Batch Requests*, H. Casanova, in the *Journal of Grid Computing*, 5(2), 235–250, **2007**.
26. *Characterizing Resource Availability in Enterprise Desktop Grids*, D. Kondo, G. Fedak, F. Cappello, H. Casanova, in the *Journal of Future Generation Computer Systems*, 23(7), 888–903, **2007**.
25. *Steady-State Scheduling of Multiple Divisible Load Applications on Wide-Area Distributed Computing Platforms*, L. Marchal, Y. Yang, H. Casanova, Y. Robert, in the *International Journal of High Performance Computing Applications (IJHPCA)*, 20(8), 365–381, **2006**.
24. *Interference-Aware Scheduling*, B. Kreaseck, L. Carter, H. Casanova, J. Ferrante, S. Nandy, in the *International Journal of High Performance Computing Applications (IJHPCA)*, 20(2), 45–59, **2006**.
23. *New Grid Scheduling and Rescheduling Methods in the GrADS Project*, F. Berman, H. Casanova, A. Chien, K. Cooper, H. Dail, A. Dasgupta, W. Deng, J. Dongarra, L. Johnsson, K. Kennedy, C. Koelbel, B. Liu, X. Liu, A. Mandal, G. Marin, M. Mazin, J. Mellor-Crummey, C. Mendes, A. Olugbile, M. Patel, D. Reed, Z. Shi, O. Sievert, H. Xia, A. Yarkhan, in the *International Journal of Parallel Programming*, 33(2), 209–229, **2005**.
22. *Network Modeling Issues for Grid Application Scheduling*, H. Casanova, in the *International Journal of Foundations of Computer Science (IJFCS)*, 16(2), 145–162, **2005**.
21. *Multi-Round algorithms for Scheduling Divisible Workloads*, Y. Yang, K. van der Raadt, H. Casanova, *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, 16(11), 1092–1102, **2005**.
20. *Scheduling Divisible Loads on Star and Tree Networks: Results and Open Problems*, O. Beau-

- mont, H. Casanova, A. Legrand, Y. Robert, Y. Yang, *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, 16(3), 207–218, **2005**.
19. *The Encyclopedia of Life Project: Grid Software and Deployment*, W. Li, R. Byrnes, J. Hayes, V. Reyes, A. Birnbaum, A. Shabab, C. Mosley, D. Pekurovsky, G. Quinn, I. Shindyalov, H. Casanova, L. Ang, F. Berman, M. Miller, P. Bourne, in the *Journal of New Generation Computing on Grid Systems for Life Sciences*, 22(2), 127–136, **2004**.
18. *A Simple MPI Process Swapping Architecture for Iterative Applications*, O. Sievert, H. Casanova, *The International Journal of High Performance Computing Applications (IJHPCA)*, 18(3), 341–352, **2004**.
17. *The Virtual Instrument: Support for Grid-enabled Scientific Simulations*, H. Casanova, et al., *The International Journal of High Performance Computing Applications (IJHPCA)*, 18(1), 3–17, **2004**.
16. *Resource Allocation Strategies for Guided Parameter Space Searches*, M. Faerman, A. Birnbaum, F. Berman, H. Casanova, *The International Journal of High Performance Computing Applications (IJHPCA)*, 17(4), 383–402, **2003**.
15. *Adaptive Computing on the Grid Using AppLeS*, F. Berman, R. Wolski, H. Casanova, W. Cirne, H. Dail, M. Faerman, S. Figueira, J. Hayes, G. Obertelli, J. Schopf, G. Shao, S. Smallen, N. Spring, A. Su, D. Zagorodnov, *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, 14(4), 369–382, **2003**.
14. *A Decoupled Scheduling Approach for Grid Application Development Environments*, H. Dail, F. Berman, H. Casanova, *Journal of Parallel and Distributed Computing (JPDC)*, Special issue on Grid Computing, 63(5), 505–524, **2003**.
13. *Using TOP-C and AMPIC to Port Large Parallel Applications to the Computational Grid*, G. Cooperman, H. Casanova, J. Hayes, T. Witzel, *The International Journal on Future Generation Computer Systems (FGCS)*, 19(4), 587–596, **2003**.
12. *Applying Scheduling and Tuning to On-line Parallel Tomography*, S. Smallen, H. Casanova, F. Berman, *Scientific Programming*, 10(4), **2003**.
11. *Innovation of the NetSolve Grid Computing System*, D. Arnold, H. Casanova, J. Dongarra, *Concurrency and Computation: Practice and Experience (CCPE)*, 14(13-15), 1457–1479, **2002**.
10. *Middleware for the Use of Storage in Communication*, M. Beck, D. Arnold, A. Bassi, F. Berman, H. Casanova, J. Dongarra, T. Moore, G. Obertelli, J. Plank, M. Swamy, S. Vadhiyar, R. Wolski, *Parallel Computing*, 28(12), 1773–1787, **2002**.
9. *Distributing MCell Simulations on the Grid*, H. Casanova, T. Bartol, J. Stiles, F. Berman, *The International Journal of High Performance Computing Applications (IJHPCA)*, Vol. 14(3), 243–257, Fall **2001**.
8. *The AppLeS Parameter Sweep Template: User-Level Middleware for the Grid*, H. Casanova, G. Obertelli, F. Berman, R. Wolski, *Scientific Programming*, Vol. 8(3), 111–126, **2001**.
7. *Adaptive Scheduling for Task Farming with Grid Middleware*, H. Casanova, M. Kim, J. Plank, J. Dongarra, *The International Journal of Supercomputer Applications and High Performance Computing (IJHPCA)*, Vol. 13, 231–240, **1999**.
6. *Logistical Quality of Service in NetSolve*, M. Beck, H. Casanova, J. Dongarra, T. Moore, J. Plank, F. Berman, R. Wolski, *Computers and Communications*, Vol. 22, Issue 11, 1034–1044, **1999**.

5. *Deploying Fault tolerance and Task Migration with NetSolve*, J. Plank, H. Casanova, M. Beck, J. Dongarra, *The International Journal on Future Generation Computer Systems* (FGCS), Vol. 15, 745–755, **1999**.
4. *Stochastic Performance Prediction for Iterative Algorithms in Distributed Environments*, H. Casanova, M. Thomason, J. Dongarra, *Journal of Parallel and Distributed Computing* (JPDC), Vol. 58(1), 68–91, **1999**.
3. *Using agent-based software for scientific computing in the NetSolve system*, H. Casanova, J. Dongarra, *Parallel Computing*, Vol. 24, 1777–1790, **1998**.
2. *Java Access to Numerical Libraries*, H. Casanova, D. Doolin, J. Dongarra, *Concurrency: Practice and Experience* (CPE), Vol. 9(11), 1279–1291, **1997**.
1. *NetSolve: A Network-Enabled Server for Solving Computational Science Problems*, H. Casanova, J. Dongarra, *The International Journal of Supercomputer Applications and High Performance Computing* (IJHPCA), Vol. 11(3), 212–223, Fall **1997**.

Refereed Conference and Workshop Proceedings

114. *Simulation of Large-Scale HPC Storage Systems: Challenges and Techniques*, J. Monniot, F. Tessier, H. Casanova, G. Antoniu, in Proc. of the 31st IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC), Distinguished paper award nominee, Dec **2024**.
113. *Automated Calibration of Parallel and Distributed Computing Simulators: A Case Study*, J. McDonald, M. Horzela, F. Suter, H. Casanova, in Proc. of the 25th IEEE International Workshop on Parallel and Distributed Scientific and Engineering Computing (PDSEC), May **2024**.
112. *Modelling Distributed Heterogeneous Computing Infrastructures for HEP Applications*, M. Horzela, H. Casanova, M. Giffels, A. Gottmann, R. Hofsaess, G. Quast, S. Rossi Tisbeni, A. Streit, F. Suter, in Proc. of the 26th International Conference on Computing in High Energy and Nuclear Physics (CHEP), May **2023**.
111. *WfCommons: Data Collection and Runtime Experiments using Multiple Workflow Systems*, H. Casanova, K. Berney, S. Chastel, R. Ferreira da Silva, in Proc. of the 1st IEEE International Workshop on Workflows in Distributed Environments (WiDE), Jun **2023**.
110. *WfBench: Automated Generation of Scientific Workflow Benchmarks*, T. Coleman, H. Casanova, K. Maheswari, L. Pottier, S. Wilkinson, J. Wozniak, F. Suter, M. Shankar, R. Ferreira da Silva, in Proc. of the 13th International Workshop on Performance Modeling, Benchmarking and Simulation of High Performance Computer System (PBMS), Nov **2022**.
109. *On the Feasibility of Simulation-driven Portfolio Scheduling for Cyberinfrastructure Runtime Systems*, H. Casanova, Y. C. Wong, L. Pottier, R. R. Ferreira da Silva, in Proc. of the 25th Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), June **2022**.
108. *Peachy Parallel Assignments (EduPar 2022)*, H. M. Bückner, H. Casanova, R. Ferreira da Silva, A. Lasserre, D. Luyen, R. Namyst, J. Schoder, P.-A. Wacrenier, D. P. Bunde, Proc. of the Workshop on Parallel and Distributed Computing Education (EduPar), Jun **2022**.
107. *Peachy Parallel Assignments (EduHPC 2021)*, H. Casanova, R. Ferreira da Silva, A. Gonzalez-Escribano, H. Li, Y. Torres, and D. Bunde, in proc. of the Workshop on Education for High-Performance Computing (EduHPC), Nov **2021**.

106. *Modeling the Linux page cache for accurate simulation of data-intensive applications*, H.-D. Do, V. Hayot-Sasson, R. Ferreira da Silva, C. Steele, H. Casanova, T. Glatard, in Proc. of IEEE Cluster, Sep. **2021**
105. *WfChef: Automated Generation of Accurate Scientific Workflow Generators*, T. Coleman, H. Casanova, R. Ferreira da Silva, in Proc. of the 17th IEEE International eScience Conference (eScience), Sep. **2021**
104. *GLUME: A Strategy for Reducing Workflow Execution Times on Batch-Scheduled Platforms*, E. Hataishi, P.-F. Dutot, R. Ferreira da Silva, H. Casanova, in Proc. of the 24th Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), May **2021**
103. *Evaluating energy-aware scheduling algorithms for I/O-intensive scientific workflows*, T. Coleman, H. Casanova, T. Gwartney, R. Ferreira da Silva, in Proc. of the International Conference on Computational Science (ICCS), June **2021**
102. *Peachy Parallel Assignments (EduHPC 2020)*, H. Casanova, R. Ferreira Da Silva, A. Gonzalez-Escribano, W. Koch, Y. Torres, and D.P. Bunde, in Proc. of the Workshop on Education for High-Performance Computing (EduHPC), Nov. **2020**.
101. *WorkflowHub: Community Framework for Enabling Scientific Workflow Research and Development*, R. Ferreira Da Silva, Pottier, L., Coleman, T., Deelman, E., H. Casanova, in Proc. of the 15th Workshop on Workflows in Support of Large-Scale Science (WORKS), Nov. **2020**.
100. *Modeling the Performance of Scientific Workflow Executions on HPC Platforms with Burst Buffers*, L. Pottier, R. Ferreira Da Silva, H. Casanova, E. Deelman, in Proc. of the 22nd IEEE Cluster conference, Kobe, Japan, Sep. **2020**.
99. *Teaching Parallel and Distributed Computing Concepts in Simulation with WRENCH*, R. Tanaka, R. Ferreira da Silva, H. Casanova, in Proc. of the Workshop on Education for High-Performance Computing (EduHPC), Denver, Colorado, Nov. **2019**.
98. *Bridging Concepts and Practice in eScience via Simulation-driven Engineering*, R. Ferreira da Silva, H. Casanova, R. Tanaka, F. Suter, in Proc. of the Bridging from Concepts to Data and Computation for eScience Workwhop (BC2DC), Sep. **2019**.
97. *Accurately Simulating Energy Consumption of I/O-intensive Scientific Workflows*, R. Ferreira da Silva, A.-C. Orgerie, H. Casanova, R. Tanaka, E. Deelman, F. Suter, in Proc. of the International Conference on Computational Science (ICCS), Faro, Portugal, June **2019**.
96. *Sparse 3-D NoCs with Inductive Coupling*, M. Koibuchi, L. Leong, T. Totoki, H. Matsutani, H. Amana, H. Casanova, in Proc. of the Design Automation Conference (DAC), Las Vegas, Texas, June **2019**.
95. *WRENCH: Workflow Management System Simulation Workbench*, H. Casanova, S. Pandey, J. Oeth, R. Tanaka, F. Suter, R. Ferreira da Silva, in Proc. of the Workshop on Workflows in Support of Large-Scale Science (WORKS), Dallas, Texas, Nov. **2018**.
94. *SMPI Courseware: Teaching Distributed-Memory Computing with MPI in Simulation*, H. Casanova, M. Quinson, A. Legrand, F. Suter, in Proc. of the Workshop on Education for High-Performance Computing (EduHPC), **best paper award**, Dallas, Texas, Nov. **2018**.
93. *Analysis-driven Engineering of Comparison-based Sorting Algorithms on GPUs*, B. Karsin, V. Weichert, H. Casanova, J. Iacono, N. Sitchinava, in Proc. of the 32nd ACM International Conference on Supercomputing (ICS), Beijing, China, June **2018**.
92. *Beyond binary search: parallel in-place construction of implicit search trees*, K. Berney, H.

- Casanova, A. Higuchi, B. Karsin, N. Sitchinava, in Proc. of the 32nd IEEE International Parallel & Distributed Processing Symposium (IPDPS), Vancouver, Canada, May **2018**.
91. *Checkpointing Workflows for Fail-Stop Errors*, L. Han, L.-C. Canon, H. Casanova, Y. Robert, F. Vivien, in Proc. of the 19th IEEE Cluster conference, Honolulu, Hawai'i, Sep. **2017**.
 90. *A Case for Uni-Directional Network Topologies in Large-Scale Clusters*, M. Koibuchi, T. Toki, H. Matsutani, H. Amano, F. Chaix, I. Fujiwara, H. Casanova, in Proc. of the 19th IEEE Cluster conference, Honolulu, Hawai'i, Sep. **2017**.
 89. *High-Bandwidth Low-Latency Approximate Interconnection Networks*, D. Fujiki, K. Ishii, I. Fujiwara, H. Matsutani, H. Amano, H. Casanova, M. Koibuchi, in Proc. of the 23rd IEEE Symposium on High Performance Computer Architecture (HPCA), Austin, Texas, Feb. **2017**.
 88. *An Efficient Algorithm for the 1D Total Visibility-Index Problem*, P. Afshani, M. de Berg, H. Casanova, B. Karsin, C. Lambrechts, N. Sitchinava, C. Tsirogiannis, in Proc. of Algorithm Engineering & Experiments (ALENEX), Barcelona, Spain, Jan. **2017**.
 87. *Towards Ideal Hop Counts in Interconnection Networks with Arbitrary Size*, M. Koibuchi, I. Fujiwara, F. Chaix, H. Casanova, in Proc. of the 4th International Symposium on Computing and Networking (CANDAR), Hiroshima, Japan, Nov. **2016**.
 86. *Computing the expected makespan of task graphs in the presence of silent errors*, H. Casanova, J. Herrmann, Y. Robert, in Proc. of the 9th International Workshop on Programming Models and Systems Software for High-End Computing, Philadelphia, Pennsylvania, Aug. **2016**.
 85. *Efficient Batched Predecessor Search in Shared Memory on GPUs*, B. Karsin, H. Casanova, N. Sitchinava, in Proc. of the 22nd IEEE International Conference on High Performance Computing (HiPC), Bengaluru, India, Dec. **2016**.
 84. *Scheduling computational workflows on failure-prone platforms*, G. Aupy, A. Benoit, H. Casanova, Y. Robert, in Proc. of the 17th Workshop on Advances on Parallel and Distributed Processing Symposium (APDCM), Hyderabad, India, May **2015**.
 83. *Indexing of Spatiotemporal Trajectories for Efficient Distance Threshold Similarity Searches on the GPU*, M. Gowanlock, H. Casanova, in Proc. of the 29th IEEE International Parallel & Distributed Processing Symposium (IPDPS), Hyderabad, India, May **2015**.
 82. *Augmenting Low-latency HPC Network with Free-space Optical Links*, I. Fujiwara, M. Koibuchi, T. Ozaki, H. Matsutani, H. Casanova, in Proc. of the 21st IEEE International Symposium on High Performance Computer Architecture (HPCA), Bay Area, California, Feb. **2015**.
 81. *Distance Threshold Similarity Searches on Spatiotemporal Trajectories using GPGPU*, M. Gowanlock, H. Casanova, in Proc. of the 21st IEEE Conference on High Performance Computing (HiPC), Goa, India, Dec. **2014**.
 80. *In-Memory Distance Threshold Queries on Moving Object Trajectories*, M. Gowanlock, H. Casanova, in Proc. of the 6th International Conference on Advances in Databases, Knowledge, and Data Applications (DBKDA), Chamonix, France, Apr. **2014**.
 79. *Cost-Optimal Execution of Boolean Query Trees with Shared Streams*, H. Casanova, L. Lim, Y. Robert, F. Vivien, D. Zaidouni, in Proc. of 28th IEEE International Parallel and Distributed Processing Symposium (IPDPS), Phoenix, AZ, May **2014**.
 78. *Skywalk: a Topology for HPC Networks with Low-delay Switches*, I. Fujiwara, M. Koibuchi, H. Matsutani, H. Casanova, in Proc. of 28th IEEE International Parallel and Distributed Processing Symposium (IPDPS), Phoenix, AZ, May **2014**.

77. *Scheduling Tightly-Coupled Applications on Heterogeneous Desktop Grids*, H. Casanova, F. Dufossé, Y. Robert, F. Vivien, in Proc. of the 21st International Heterogeneity in Computing Workshop (HCW), Boston, MA, May **2013**.
76. *Layout-conscious Random Topologies for HPC Off-chip Interconnects*, M. Koibuchi, I. Fujiwara, H. Matsutani, H. Casanova, in Proc. of the 19th IEEE International Symposium on High Performance Computer Architecture (HPCA), Shenzhen, China, Feb. **2013**.
75. *Mapping Tightly-Coupled Applications on Volatile Resources*, H. Casanova, F. Dufossé, Y. Robert, F. Vivien, in Proc. of the 21st Euromicro International Conference on Parallel, Distributed, and Network-Based Processing (PDP), Belfast, Northern Ireland, Feb. **2013**.
74. *Cabinet Layout Optimization of Supercomputer Topologies for Shorter Cable Length*, I. Fujiwara, M. Koibuchi, H. Casanova, in Proc. of the 13th International Conference on Parallel and Distributed Computing, Applications and Technologies (PDCAT), Beijing, China, Dec. **2012**.
73. *A Case for Random Shortcut Topologies for HPC Interconnects*, M. Koibuchi, H. Matsutani, H. Amano, D. F. Hsu, H. Casanova, in Proc. of the ACM IEEE 39th International Symposium on Computer Architecture (ISCA), Portland, Oregon, Jun. **2012**,
72. *Virtual Machine Resource Allocation for Service Hosting on Heterogeneous Distributed Platforms*, M. Stillwell, F. Vivien, H. Casanova, in Proc. of the 26th IEEE International Parallel & Distributed Processing Symposium (IPDPS), Shanghai, China, May **2012**.
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61. *Resource Allocation for Multiple Concurrent In-network Stream-processing Applications*, A. Benoit, H. Casanova, V. Rehn-Sonigo, Y. Robert, in Proc. of the 7th International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Platforms (HeteroPar), Delft, The Netherlands, **best paper award**, Aug. **2009**.
60. *Heuristics for Continuity Editing of Cinematic Computer Graphics Scenes*, K. Kardan, H. Casanova, in Proc. of the Games Papers (Sandbox) track of the ACM SIGGRAPH conference, New Orleans, Louisiana, Aug. **2009**.
59. *Characterizing Fault Tolerance in Genetic Programming*, D. Lombraa F. Fernandez de Vega, H. Casanova, in Proc. of the Workshop on Bio-Inspired Algorithms for Distributed Systems (BADs'09), Barcelona, Spain, Jun. **2009**.
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55. *Scheduling Mixed-Parallel Applications with Advance Reservations*, K. Aida, H. Casanova, in Proc. of the 17th IEEE International Symposium on High Performance Distributed Computing (HPDC-17), Boston, Massachusetts, Jun. **2008**.
54. *SimGrid: a Generic Framework for Large-Scale Distributed Experimentations*, H. Casanova, A. Legrand, M. Quinson, in Proc. of Tenth International Conference on Computer Modeling and Simulation (UKSim), Cambridge, U.K., Apr. **2008**.
53. *Probabilistic Allocation of Synchronous Tasks to Desktop Grid Resources*, J. Wingstrom, H. Casanova, in Proc. of Workshop on Desktop Grids and Volunteer Computing Systems (PC-Grid), Miami, Florida, Apr. **2008**.
52. *Speed and Accuracy of Network Simulation in the SimGrid Framework*, K. Fujiwara, H. Casanova, in Proc. of First International Workshop on Network Simulation Tools (NSTools), Nantes, France, Oct. **2007**.
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48. *Improving Grid Resource Allocation via Integrated Selection and Binding*, Y.-S. Kee, K. Yocum, A. Chien, H. Casanova, in Proc. of SC'06, Tampa, Florida, Nov. **2006**.

47. *Measuring the Performance and Reliability of Production Computational Grids*, O. Khalili, J. He, C. Olschanowsky, A. Snaveley, H. Casanova, in Proc. of the 7th IEEE/ACM International Conference on Grid Computing (Grid'06), Barcelona, Spain, Sep. **2006**.
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37. *Resource Management for Short-Lived Applications on Enterprise Desktop Grids*, D. Kondo, A. Chien, H. Casanova, in Proc. of SC'04, Pittsburgh, Pennsylvania, Nov. **2004**.
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 28. *Benchmark Probes for Grid Assessment*, G. Chun, H. Dail, H. Casanova, A. Snively, in Proc. of the High-Performance Grid Computing Workshop, Santa Fe, Apr. **2004**.
 27. *Policies for Swapping MPI Processes*, O. Sievert, H. Casanova, in Proc. of the 12th IEEE Symposium on High Performance and Distributed Computing (HPDC-12), Seattle, Jun. **2003**.
 26. *RUMR: Robust Scheduling for Divisible Workloads*, Y. Yang, H. Casanova, in Proc. of the 12th IEEE Symposium on High Performance and Distributed Computing (HPDC-12), Seattle, Jun. **2003**.
 25. *Clustering Hosts in P2P and Global Computing Platforms*, A. Agrawal, H. Casanova, in Proc. of the Workshop on Global and Peer-to-Peer Computing on Large Scale Distributed Systems, Tokyo, Japan, Apr. **2003**.
 24. *Performance Modeling for Entity-level Simulations*, A. Su, F. Berman, H. Casanova, in Proc. of the Parallel and Distributed Scientific and Engineering Computing with Applications Workshop, Nice, France, Apr. **2003**.
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 19. *An Overview of GridRPC: A Remote Procedure Call API for Grid Computing*, H. Nakada, S. Matsuoka, K. Seymour, J. Dongarra, C. Lee, H. Casanova, in Proc. of the Grid Computing Workshop, 274–279, Baltimore, Nov. **2002**.
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13. *A Study of Deadline Scheduling for Client-Server Systems on the Computational Grid*, A. Takefusa, H. Casanova, S. Matsuoka, F. Berman, in *Proc. of the 10th IEEE Symposium on High Performance and Distributed Computing (HPDC'01)*, San Francisco, 406–415, Aug. **2001**.
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10. *Network-Enabled Server Systems: Deploying Scientific Simulations on the Grid*, H. Casanova, S. Matsuoka, J. Dongarra, in *Proc. of High Performance Computing 2001 (HPC'01)*, Seattle, 83–91, Apr. **2001**.
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3. *Providing Uniform Dynamic Access to Numerical Software, H. Casanova, J. Dongarra, Vol. 105 of the IMA Volumes in Mathematics and its Applications, Algorithms for Parallel Processing, Edited by M. Heath, A. Ranade, R. Schrieber, 345–355, Springer-Verlag, 1996.*
 2. *Providing Access to High Performance Computing Technologies, H. Casanova, S. Browne, J. Dongarra in Proc. of the 3rd International Workshop PARA'96. Lecture Notes in Computer Science, edited by J. Waśniewski, J. Dongarra, K. Madsen, D. Olesen, Springer Verlag #1184, p. 123–133, Aug. 1996.*
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8. *Modeling Large-Scale Platforms for the Analysis and the Simulation of Scheduling Strategies, H. Casanova, in Proc. of the 6th Workshop on Advances in Parallel and Distributed Computational Models, Apr. 2004.*
7. *Benchmarks for Grid Computing: A Review of Ongoing Efforts and Future Directions, A. Snaveley, G. Chun, H. Casanova, R. Van der Wijngaart, M. Frumkin, SIGMETRICS Performance Evaluation Review, 30(4), 27–32, Mar. 2003.*
6. *Optimizing Performance and Reliability in Distributed Computing Systems Through Wide Spectrum Storage, J. Plank, M. Beck, J. Dongarra, R. Wolski, H. Casanova, in Proc. of the Workshop on Next Generation Software, Nice, France, Apr. 2003.*
5. *Algorithms and Software to Schedule and Deploy Independent Tasks in Grid Environments, H. Casanova, J. Hayes, Y. Yang, in Proc. of the 2002 workshop on Distributed Computing, Metacomputing, and Resource Globalization, Aussois, France, Dec. 2002.*
4. *Distributed Computing Research Issues for Grid Computing, H. Casanova, Quarterly Newsletter for the ACM Special Interest Group on Algorithms and Computation Theory (SIGACT News), 33(2), Sep. 2002.*
3. *Distributing MCell Simulations on the Grid, H. Casanova, T. Bartol, J. Stiles, F. Berman, in Proc. of the Workshop on Clusters and Computational Grids for Scientific Computing (WCCGSC'00), Lyon France, Sep. 2000.*
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Books

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Book Chapters

6. *Energy-Efficient Job Placement on Clusters, Grids, and Clouds*, D. Borgetto, H. Casanova, G. Da Costa, J.-M. Pierson, in *Energy-Efficient Distributed Computing Systems*, A. Zomaya and Y. C. Lee editors, Wiley Publisher, Inc., **2012**.
6. *Scheduling in the Grid Application Development Software Project*, H. Dail, O. Sievert, F. Berman, H. Casanova, A. Yarkhan, S. Vadhiyar, J. Dongarra, C. Liu, L. Yang, D. Angulo, I. Foster, chapter in *Grid Resource Management, State of the Art and Future Trends*, J. Nabrzyski, J. Schopf, J. Weglarz editors, Kluwer Academic Publishers, **2003**.
5. *Application-Level Tools*, H. Bal, H. Casanova, J. Dongarra, S. Matsuoka, chapter in *Grid 2: Blueprint for a New Computing Infrastructure*, I. Foster, C. Kesselman editors, M. Kaufmann Publishers, Inc., 2nd edition, **2003**.
4. *Parameter Sweeps on the Grid with APST*, H. Casanova, F. Berman, chapter 33 in *Grid Computing: Making the Global Infrastructure a Reality*, F. Berman, G. Fox, T. Hey editors, Wiley Publishers, Inc., **2003**.
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2. *Parallel and Distributed Scientific Computing: A Numerical Linear Algebra Problem Solving Environment Designer's Perspective*, A. Petitet, H. Casanova, J. Dongarra, Y. Robert, R. C. Whaley, chapter in *Handbook on Parallel and Distributed Processing*, International Handbook on Information Systems Vol. 3, J. Blazewicz, K. Ecker, B. Plateau, D. Trystram Editors, Springer Verlag, **2000**.
1. *Application-Specific Tools*, J. Dongarra, H. Casanova, C. Johnson, M. Miller, chapter in *Computational Grids: Blueprint for a New Computing Infrastructure*, I. Foster, C. Kesselman editors, M. Kaufmann Publishers, Inc., **1999**.

Misc. Publications and White Papers

5. *Generating Grid Resource Requirement Specifications*, R. Huang, H. Casanova, A. Chien, 2-page poster in Proc. of the 16th IEEE International Symposium on High Performance Distributed Computing (HPDC-16), Monterey, California, Jun. **2007**
4. *Robust Resource Allocation for Large-scale Distributed Shared Resource Environments*, Y.-S. Kee, K. Yocum, A. Chien, and H. Casanova, 2-page poster in Proc. of the 15th IEEE International Symposium on High Performance Distributed Computing (HPDC-15), Paris, France, Jun. **2006**
3. *The SIMGRID Project: Simulation and Deployment of Distributed Applications*, A. Legrand, M. Quinson, H. Casanova, K. Fujiwara, 2-page poster in Proc. of the 15th IEEE International Symposium on High Performance Distributed Computing (HPDC-15), Paris, France, Jun. **2006**
2. *A Brief Overview of the APST Project*, H. Casanova, J. Hayes, F. Berman, Newsletter of the Korean Institute of Science and Technology Information (KISTI), Aug. **2002**.
1. *Network-Enabled Server Systems and the Computational Grid*, S. Matsuoka, H. Casanova, White Paper for the Grid Forum, Jul. **2000**.

INVITED PRESENTATIONS, TUTORIALS, and COLLOQUIA

- *On the use of simulation for scheduling (research)*, 15th Scheduling for Large Scale Systems Workshop, Fréjus, France, June 2022.
- *Checkpointing Workflows for Fail-Stop Failures*, Information Science Institute, Los Angeles, California, Nov. 2018.
- *Scheduling and Simulating Parallel and Distributed Applications*, 6-session seminar series, National Institute for Informatics, Tokyo, Japan, Oct. 2013.
- *Cost-Optimal Execution of Boolean Query Trees with Shared Streams*, INRIA Workshop on Scheduling for Exascale Systems, Dagstuhl Schloss, Germany, Sep. 2013.
- *A Case for Random Topologies in HPC Interconnects*, INRIA Workshop on Scheduling, Pittsburgh, Pennsylvania, Jun. 2012.
- *Challenges and Hopes for Scheduling Parallel Applications on Desktop Grids*, **Keynote Address**, Workshop on Desktop Grids and Volunteer Computing Systems (PCGrid'11), Anchorage, Alaska, May 2011.
- *Flexible Cluster Sharing*, Institut de Recherche en Informatique de Toulouse, Toulouse, France, Nov. 2008.
- *Parallel resource sharing: Shortcomings, Cheats, and Perspectives*, Sept. of Computer Science, University of Bologna, Bologna, Italy, Jun. 2008.
- *Scheduling Mixed-Parallel Applications with Advance Reservations*, INRIA Workshop on scheduling for large scale distributed platforms, Aussois, France, May 2008.
- *Simulation for Large-Scale Distributed Computing Research*, tutorial at the 8th IEEE International Symposium on Cluster Computing and the Grid (CCGrid'08), Lyon, France, May 2008.
- *Grid Computing: Technology and Applications*, invited plenary presentations at Telecom'05, Hawai'i TeleCommunication Association, Honolulu, Hawai'i, Oct. 2005.
- *Scheduling and Deploying Applications on Large-Scale Platforms*, invited lecture at the Departamento de Informática, Centro Universitario de Mérida, Mérida, Spain, Jun. 2005.
- *Simulation for Grid Computing*, **Keynote Address**, 2nd International Grid Performance Workshop, Edinburgh, United Kingdom, Jun. 2005.
- *Grid Computing: Principles, Software, Applications, and Tools*, **Keynote Address**, 2nd Workshop on New Frontiers of Bioinformatics in Latin America – Griding Biology, Merida, Venezuela, Nov. 2004.
- *Grid platform modeling issues for scheduling research*, Workshop on scheduling for large scale distributed platforms, Aussois, France, Aug. 2004.
- *Grid Technology, Application, and Research*, presentation to the IEEE Society, University of California, La Jolla, California, May 2004.
- *Deploying Applications on the Grid: Engineering and Research*, University of San Diego, San Diego, California, Sep. 2003.
- *Divisible Workload Scheduling*, Paris XI University, Orsay, France, Jun. 2003.
- *UMR and RUMR: Algorithms to Schedule Divisible Workloads*, the Tokyo Institute of Technology (TITECH), Tokyo, Japan, May 2003.
- *MCell on the Grid: applications, software, research, and impact*, Plenary presentation at the National Partnership for Advanced Computing Infrastructure All-Hands Meeting (NPACI-

- AHM), La Jolla, California, Mar. 2003.
- *From Parameter Sweep Applications to Divisible Workloads*, Workshop on Distributed Computing, Metacomputing, and Resource Globalization, Aussois, France, Nov. 2002.
 - *An Introduction to Grid Computing*, the Salk Institute, La Jolla, California, Nov. 2002.
 - *Processor Swapping for Enterprise Computing*, Workshop on Cluster and Computational Grids for Scientific Computing, Faverges, France, Sep. 2002.
 - *Deploying and Scheduling Parameter Sweep Applications*, Entropia Inc., San Diego, California, Mar. 2002.
 - *From Grid to Global Computing: Deploying and Scheduling Parameter Sweep Applications*, Organization for Parallel Computing Research (ORAP), Saclay, France, Mar. 2002.
 - *The Virtual Instrument Project*, National Science Foundation Workshop on Information Technology Research and Education, Palo Alto, California, Mar. 2002.
 - *APST and its Uses on Clusters*, IEEE Cluster 2001 Conference, Cluster Application Panel, Newport Beach, California, Oct. 2001.
 - *Promoting the Grid with APST*, 1st US/UK Grid Workshop, San Francisco, California, Aug. 2001.
 - *Simulation for Application Scheduling*, Monash University, Melbourne, Australia, May 2001.
 - *The AppLeS Parameter Sweep Template: User-Level Middleware for the Grid*, NASA IPG workshop, NASA Ames Research Center, Sep. 2000.
 - *Internet-wide Scientific Software Access with NetSolve*, **Keynote Address**, Workshop on Internet Accessible Mathematical Computation, Vancouver, Jul. 1999.
 - *Network-enabled Servers*, SIAM Annual Meeting 1999, Atlanta, May 1999.
 - *NetSolve: Current and Future Deployment*, Workshop on Global and Cluster Computing, Tsukuba, Japan, Mar. 1998.
 - *NetSolve: Concepts and Applications*, Danish Computing Centre for Research and Education, Lungby, Denmark, Dec. 1996.
 - *Introduction to the NetSolve Project*, Mathematics and Computer Science Department of Emory University, Atlanta, Georgia, Oct. 1996.

FUNDING AWARDS

- \$335,000 / 3 years (PI), National Science Foundation, 08/24 - 07/27
WfCommons Tools for Workflow Research, Development, and Education on the CyberInfrastructure
- \$600,000 / 3 years (Co-PI), National Science Foundation, 10/21 - 09/24
Simulation-driven runtime resource management for distributed workflow applications (collaborative award with USC)
- \$600,000 / 3 years (Co-PI), National Science Foundation, 08/21 - 07/24
Simulation-driven Evaluation of Cyberinfrastructure Systems (collaborative award with USC)
- \$15,000 / 1 years (Co-PI), National Science Foundation, 08/20 - 09/21
Infrastructure for Enabling Systematic Development and Research of Scientific Workflow Management Systems (collaborative award with USC and the University of Chicago)

- \$500,000 / 3 years (PI), National Science Foundation, 10/19 - 09/22
Integrating core CI literacy and skills into university curricula via simulation-driven activities
(collaborative award with USC)
- \$500,000 / 3 years (PI), National Science Foundation, 01/17 - 12/20
WRENCH: A Simulation Workbench for Scientific Workflow Users, Developers, and Researchers
(collaborative award with USC)
- \$31,764 / 3 years (co-PI), National Science Foundation, 06/09 - 05/12
DiRT: A Testbed for Distributed Research
- \$500,000 / 3 years (co-PI), National Science Foundation, 10/05 - 09/08
Designing Large-Scale Distributed Systems for Realistic Failure Models
- \$5,400,000 / 5 years (co-PI), National Science Foundation, 10/03 - 09/08
Virtual Grid Application Development Software (VGrADS)
- \$500,000 / 3 years (PI), National Science Foundation, 07/03 - 06/06
Models to Support Performance-Engineering of Global Computations
- \$48,000 / 3 years (co-PI), National Science Foundation / Institut National de Recherche en Informatique et en Automatique, 07/03 - 06/06
Algorithms and Simulations for Scheduling on Large-Scale Distributed Platforms
- \$450,000 / 3 years (co-PI), National Science Foundation, 01/03 - 12/05
Autonomous Scheduling on Large Distributed Systems
- \$235,000 / 1 year (PI), National Science Foundation, FY 2004
National Partnership for Advanced Computational Infrastructure (NPACI)
- \$750,000 / 3 years (co-PI), National Science Foundation, 09/02 - 08/05
Data Intensive Grid Benchmarks
- \$792,000 / 3 years (co-PI), National Science Foundation, 10/02 - 09/05
Optimizing Performance and Reliability in Distributed Computing Systems Through Wide Spectrum Storage Services
- \$270,000 / 1 year (PI), National Science Foundation, FY 2003
National Partnership for Advanced Computational Infrastructure (NPACI)
- \$700,000 / 2 years (co-PI), National Science Foundation, 07/02 - 06/04
GridSolve: A System for Grid-enabling General Purpose Problem Solving Environments
- \$280,000 / 1 year (PI), National Science Foundation, FY 2002
National Partnership for Advanced Computational Infrastructure (NPACI)
- \$2,500,000 / 3 years (co-PI), National Science Foundation, 09/00 - 08/03
Virtual Instruments: Scalable Software Instruments for the Grid
- \$1,300,000 / 3 years (co-PI), National Science Foundation, 08/99 - 07/02
Logistical QoS through Application-driven Scheduling of Remote Storage

ADVISING

Ph.D. Dissertation Advising and Co-Advising: Benjamin Karsin (2018); Michael Gowanlock (2015); Mark Stillwell (2010); Joshua Wingstrom (2009); Richard Huang (2007); Derrick Kondo (2005); Yang Yang (2005); Alan Su (2003); Marcio Faerman (2003).

M.S. Thesis Advising and Co-Advising: Will Koch (2021); Evan Hataishi (2019); Lambert

Leong (2018); Suraj Pandey (2018); Benjamin Karsin (2012); David Schanzenbach (2011); Kaveh Kardan (2010); Kayo Fujiwara (2007); Krijn van der Raadt (2004); Charles Wurster (2004); Gregory Chun (2003); Otto Sievert (2003); Nadya Williams (2002); Holly Dail (2002); Shava Smallen (2001).

Postdoctoral Researcher Advising: Arnaud Legrand (2005); Gilles Fédak (2004); Frédéric Suter (2003); Yudith Cardinale (2003).

TEACHING

- UHM, ICS312 (UG): Machine-Level and Systems Programming (SP25, SP24, FA23, SP23, SP22, FA21, SP21, FA20, SP19, SP18, SP17, SP16, SP15, SP14, SP10, SP09, FA07)
- UHM, ICS432 (UG): Concurrent and High-Performance Programming (FA24, FA22, FA20, SP17, SP16, SP15, FA11, FA08, SP07, SP06)
- UHM, ICS632 (GR): Principles of High Performance Computing (FA21, FA18, FA17, FA16, FA15, FA14, FA08, FA07, FA06, FA05)
- UHM, ICS332 (UG): Operating Systems (FA23, FA19, SP19, SP18, FA17, SP14, SP13, FA12, SP12, SP11, FA09)
- UHM, ICS690 (GR): Graduate Seminar (SP13, FA12, SP12, FA11, SP11, FA10, SP10, FA09, SP09)
- UHM, ICS431 (UG): Computer Architecture (SP08, FA06)
- UCSD, CSE130 (UG): Programming Languages (SP05, SP04, SP03)
- UCSD, CSE260 (GR): Parallel Computing (FA04)

AWARDS / HONORS

- Chancellor's Citation for Meritorious Teaching, UH Mānoa, 2018.
- Visiting Associate Professor, National Informatics Institute (NII), Japan, 2012-2019.
- Chancellor's Citation for Meritorious Teaching, UH Mānoa, 2012.
- Best paper award at HeteroPar, Aug. 2009.
- Best student paper award at SC, Nov. 2001 (M.S. adviser of Shava Smallen).
- R&D 100 Award for designing and developing the NetSolve project, 1999.

PROFESSIONAL SERVICES

University Services

- Fall 2022 - present: Chair of the Information and Computer Science Undergraduate Committee, University of Hawai'i at Mānoa.
- Fall 2015: Associate Chair of the Information and Computer Sciences Department.
- Spring 2009 - Spring 2013: Chair of the Computer Science Graduate Program, University of Hawai'i at Mānoa.

Conference Chairing

2024

- **Co-Organizing Chair:** 2nd Workshop on Workflows in Distributed Environments, Athens, Greece, April 2024.
- 2020
- **Algorithm Track Chair:** International Conference on Parallel Processing, Edmonton, Canada, Aug 2020.
- 2017
- **Local Arrangement Co-Chair:** IEEE Cluster Computing Conference, Honolulu, Hawai'i, Sep. 2017.
- 2013
- **Co-organizer:** INRIA *Workshop on Scheduling Algorithms for Exascale*, Dagstuhl Schloss, Germany, Sep. 2013.
 - **Publicity Chair:** 42nd International Conference on Parallel Processing (ICPP), Lyon, France, Oct. 2013.
- 2011
- **Program Vice-Chair:** 11th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid), Newport Beach, California, May 2011.
- 2010
- **Program Vice-Chair:** IEEE/ACM Grid Conference, Brussels, Belgium, Oct. 2010.
- 2009
- **Program Co-Chair:** ACM/IEEE International Symposium on High Performance Distributed Computing (HPDC-18), Garching, Germany, Jun. 2009.
 - **Program Vice-Chair:** 9th IEEE Symposium on Cluster Computing and the Grid (CC-Grid'09), Shanghai, China, May 2009.
- 2008
- **Program Co-Chair:** 9th IEEE/ACM International Conference on Grid Computing (Grid 2008), Tokyo, Japan, Nov. 2008.
 - **Co-organizer:** NSF/INRIA *Workshop on Scheduling Algorithms for Large-Scale Distributed Platforms*, Aussois, France, May 2008.
 - **Publicity Chair:** 8th IEEE Symposium on Cluster Computing and the Grid (CCGrid'08), Lyon, France, May 2008.
 - **General Chair:** Heterogeneous Computing Workshop (HCW'08), Miami, Florida, Apr. 2008.
- 2007
- **Program Topic Chair:** Euro-Par 2007 (Scheduling and Load Balancing topic), Rennes, France, Aug. 2007.
 - **Program Chair:** Heterogeneous Computing Workshop (HCW'07), Long Beach, California, Mar. 2007.
- 2005
- **Program Vice-Chair:** 6th International Workshop on Grid Computing (Grid'05), Seattle, Washington, Nov. 2005.
 - **Co-organizer:** NSF/INRIA *Workshop on Scheduling Algorithms for Large-Scale Distributed*

Platforms, San Diego, California, Nov. 2005.

2004

- **General Chair:** *IEEE Conference on Cluster Computing (Cluster'04)*, San Diego, Sep. 2004.
- **Co-organizer:** *NSF/INRIA Workshop on Scheduling Algorithms for Large-Scale Distributed Platforms*, Aussois, France, Aug. 2004.

2003

- **Invited Speaker Chair:** International Conference for High Performance Computing and Communications (SC'03), Phoenix, Arizona, Nov. 2003.

1999

- **Organizer:** Mini-symposium on Network-enabled Servers, SIAM Annual Meeting 1999, Atlanta, Georgia, May 1999.

Journals

- 2012-2016: **Subject Area Editor** for the *Parallel Computing* journal.
- 2004-2009: Member of the **Editorial Board** of the *Future Generation Computer Systems* journal.
- 2006: **Guest Editor** for a special issue of the *International Journal of High Performance Computing and Applications*.
- 2005: **Guest Editor** for the a special issue of the *IEEE Transactions on Parallel and Distributed Systems (TPDS)*.

Conference Program Committees

2025

- 33rd Euromicro/IEEE International Conference on Parallel, Distributed, and Network-Based Processing, March 2025.
- 28th Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), Milan, Italy, May 2024.

2024

- 8th International Workshop on Software Correctness for HPC Applications, Atlanta, Georgia, November 2024
- 19th Workflows in Support of Large-Scale Science (WORKS) Workshop, Atlanta, Georgia, November 2024.
- International Symposium on Computer Architecture and High Performance Computing (SBACPAD), Nov 2024
- International Conference for High Performance Computing, Networking, Storage, and Analysis (SC), Nov 2024.
- 27th Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), San Francisco, California, May 2024.

2023

- 37th IEEE International Parallel and Distributed Processing Symposium (IPDPS), St. Pe-

tersburg, Florida, May 2023

- 26th Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), St. Petersburg, Florida, May 2022.

2022

- International Conference for High Performance Computing, Networking, Storage, and Analysis (SC), Dallas, Texas, Nov. 2022.
- 17th Workflows in Support of Large-Scale Science (WORKS) Workshop, Dallas, Texas, November 2022.
- 36th IEEE International Parallel and Distributed Processing Symposium (IPDPS), Lyon, France, May 2022.
- 25th Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), Lyon, France, June 2022.

2021

- 16th Workflows in Support of Large-Scale Science (WORKS) Workshop, Saint Louis, Missouri, November 2021.
- 27th International European Conference on Parallel and Distributed Computing (Europar), Lisbon, Portugal, August 2021.
- 50th International Conference on Parallel Processing (ICPP), Chicago, Illinois, August 2021.
- Conférence francophone d’informatique en Parallélisme, Architecture et Systèmes, Lyon, France, July 2021.
- 35th IEEE International Parallel and Distributed Processing Symposium (IPDPS), Portland, Oregon, May 2021.

2020

- 15th Workflows in Support of Large-Scale Science (WORKS) Workshop, Georgia, Atlanta, November 2020.
- Conférence francophone d’informatique en Parallélisme, Architecture et Système (COMPAS), Lyon, France, June 2020.
- 34rd IEEE International Parallel and Distributed Processing Symposium (IPDPS), New Orleans, Louisiana, May 2020.

2019

- 14th Workflows in Support of Large-Scale Science (WORKS) Workshop, Denver, Colorado, November 2019.
- 23rd Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), Rio de Janeiro, Brazil, May 2019.
- 19th IEEE International Symposium on Cluster, Cloud and Grid Computing (CCGrid), Larnaca, Cyprus, May 2019.
- 33rd IEEE International Parallel and Distributed Processing Symposium (IPDPS), Rio de Janeiro, Brazil, May 2019.

2018

- 13th Workflows in Support of Large-Scale Science (WORKS) Workshop, Dallas, Texas, Novem-

ber 2018.

- 22nd Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), Vancouver, Canada, May 2018.
- 25th IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC), Bengaluru, India, December 2018.

2017

- 12th Workflows in Support of Large-Scale Science (WORKS) Workshop, Denver, Colorado, November 2017.
- 24th IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC), Jaipur, India, December 2017.
- 21st Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), Orlando, Florida, June 2017.
- 31st IEEE International Parallel and Distributed Processing Symposium (IPDPS), Orlando, Florida, May 2017.
- 17th IEEE International Symposium on Cluster, Cloud and Grid Computing (CCGrid), Madrid, Spain, May 2017.

2016

- 20th Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), Hyderabad, Chicago, Illinois, May 2016.
- 1st Workshop on Fault Tolerance for Extreme Scale Computing, Kyoto, Japan, May 2016.
- 30th IEEE International Parallel and Distributed Processing Symposium (IPDPS), Chicago, Illinois, May 2016.
- 45th International Conference on Parallel Processing (ICPP), Philadelphia, Pennsylvania, Aug. 2016.

2015

- Workshop on Scheduling for Parallel Computing, Krakow, Poland, Sep. 2015.
- EuroPar Conference, Scheduling and Load Balancing track, Vienna, Austria, Aug. 2015.
- Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), Hyderabad, India, May 2015.
- 29th IEEE International Parallel and Distributed Processing Symposium (IPDPS), Hyderabad, India, May 2015.
- 44th International Conference on Parallel Processing (ICPP), Paris, France, Mar. 2015.
- 9th ACM Richard Tapia Celebration of Diversity in Computing (Tapia2015), Boston, Massachusetts, Feb. 2015.

2014

- Workshop on Reproducible Parallel Computing, Porto, Portugal, Aug. 2014.
- Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), Phoenix, Arizona, May 2014.
- International Conference for High Performance Computing, Networking, Storage, and Analysis (SC), New Orleans, Louisiana, Nov. 2014.

2013

- 42nd International Conference on Parallel Processing (ICPP), Lyon, France, Oct. 2013.
- 1st conference on Energy Efficiency on Large Scale Distributed Systems (EE-LSDS), Vienna, Austria, Apr. 2013.
- 17th Workshop on Job Scheduling Strategies for Parallel Processing, Boston, Massachusetts, May 2013.
- Workshop on Scheduling for Parallel Computing, Warsaw, Poland, Sep. 2013.
- 13th IEEE International Symposium on Cluster, Cloud and Grid Computing (CCGrid), Delft, The Netherlands, May 2013.
- IEEE Computer Society’s Technical Committee on Parallel Processing’s Ph.D. Forum at IPDPS, Boston, Massachusetts, May 2013.
- 27th International Parallel and Distributed Processing Symposium (IPDPS), Boston, Massachusetts, May 2013.
- 22nd IEEE Symposium on High-Performance Distributed Computing (HPDC-22), New York, New York, Jun. 2013.

2012

- IEEE Cluster Conference, Beijing, China, Sep. 2012.
- 3rd Workshop on Scientific Cloud Computing, Delft, The Netherlands, Jun. 2012.
- 41st International Conference on Parallel Processing (ICPP), Pittsburgh, Pennsylvania, Sep. 2012.
- 25th IEEE International Symposium on Computer-Based Medical Systems (CBMS), Rome, Italy, Jun. 2012.
- 26th International Parallel and Distributed Processing Symposium (IPDPS), Shanghai, China, May 2012.
- IEEE Computer Society’s Technical Committee on Parallel Processing’s Ph.D. Forum at IPDPS, Shanghai, China, May 2012.
- 12th IEEE International Symposium on Cluster, Cloud and Grid Computing (CCGrid), Ottawa, Canada, May 2012.
- 16th Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), Shanghai, China, May 2012.

2011

- IEEE Cluster Conference, Austin, Texas, Sep. 2011.
- Workshop on Scheduling for Parallel Computing, Torun, Poland, Sep. 2011.
- 40th International Conference on Parallel Processing (ICPP), Taipei, Taiwan, Sep. 2011.
- 2nd Workshop on Scientific Cloud Computing (ScienceCloud), San Jose, California, Jun. 2011.
- IEEE Computer Society’s Technical Committee on Parallel Processing’s Ph.D. Forum at IPDPS, Anchorage, Alaska, May 2011.
- 5th Workshop on Desktop Grids and Volunteer Computing Systems (PCGrid), Anchorage, Alaska, May 2011.
- 25th International Parallel and Distributed Processing Symposium (IPDPS), Anchorage, Alaska,

May 2011.

2010

- 17th IEEE International Conference on High Performance Computing (HiPC), Goa, India, Dec. 2010.
- International Conference for High Performance Computing, Networking, Storage, and Analysis (SC), New Orleans, Louisiana, Nov. 2010.
- 3rd Workshop on Many-Task Computing on Grids and Supercomputers, (MTAGS), New Orleans, Louisiana, Nov. 2010.
- 4th International Workshop on HealthGrid & Cloud Computing, Perth, Australia, Oct. 2010.
- 1st Workshop on Scientific Cloud Computing (ScienceCloud), Chicago, Illinois, Jun. 2010.
- 19th IEEE Symposium on High-Performance Distributed Computing (HPDC-19), Chicago, Illinois, Jun. 2010.
- IEEE Computer Society’s Technical Committee on Parallel Processing’s Ph.D. Forum at IPDPS, Atlanta, Georgia, May 2010.
- 4th Workshop on Desktop Grids and Volunteer Computing Systems (PCGrid), Melbourne, Australia, May 2010.
- 10th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid), Melbourne, Australia, May 2010.
- 15th Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), Atlanta, Georgia, Apr. 2010.

2009

- International Conference for High Performance Computing, Networking, Storage, and Analysis (SC), Portland, Oregon, Nov. 2009.
- Workshop on Scheduling for Parallel Computing, Krakow, Poland, Sep. 2009.
- 8th International Symposium on Parallel and Distributed Computing (ISPDC), Lisbon, Portugal, Jun. 2009.
- Workshop on Grids, Clouds and Virtualization (WGCV), Geneva, Switzerland, May 2009.
- Fourth Workshop on System Management Tools for Large-Scale Parallel Systems (SMTPS), Rome, Italy, May 2009.
- 8th IEEE International Symposium on Cluster Computing and the Grid (CCGrid), Shanghai, China, May 2009.
- 3rd Workshop on Desktop Grids and Volunteer Computing Systems (PCGrid), Rome, Italy, May 2009.
- IEEE Computer Society’s Technical Committee on Parallel Processing’s Ph.D. Forum at IPDPS, Rome, Italy, May 2009.
- 2009 ACM Symposium on Applied Computing (SAC), Honolulu, Hawaii, U.S.A., Mar. 2009.

2008

- High Performance Data Grid (HPDataGrid’08) workshop, Dunedin, New Zealand, Dec. 2008.
- 1st International Workshop on Robust Scheduling (RobShed’08), Melbourne, Australia, Dec. 2008.

- 14th IEEE International Conference on Parallel and Distributed Systems (ICPADS'08), Melbourne, Australia, Dec. 2008.
- International Symposium on Parallel and Distributed Processing and Applications (ISPA'08), Sydney, Australia, Sep. 2008.
- 17th IEEE Symposium on High-Performance Distributed Computing (HPDC-17), Boston, Massachusetts, Jun. 2008.
- 1st Workshop on Assessing Models of Networks and Distributed Computing Platforms, Lyon, France, May 2008.
- 8th IEEE Symposium on Cluster Computing and the Grid (CCGrid'08), Lyon, France, May 2008.
- International Symposium on Parallel Algorithms, Architectures, and Networks (ISPAN), Sydney, Australia, May 2008.
- Third Workshop on System Management Tools for Large-Scale Parallel Systems (SMTPS), Miami, Florida, Apr. 2008.
- 41st Hawai'i International Conference on System Sciences (HICSS), Software Technology Mini-Track on Grid Computing: Adaptive Software, Tools and Applications, O'ahu, Hawaii, Jan. 2008.

2007

- International Conference on Parallel Processing (ICPP), Xi'an, China, Sep. 2007.
- 1st Workshop on Scheduling for Parallel Computing, Gdansk, Poland, Sep. 2007.
- 16th International Conference on Computer and Networks (ICCCN), O'ahu, Hawai'i, Aug. 2007.
- International Conference on Distributed Computing Systems (ICDCS), Toronto, Canada, Jun. 2007.
- 16th IEEE Symposium on High Performance and Distributed Computing (HPDC-16), Monterey, California, Jun. 2007.
- 7th workshop on Global and Peer-to-Peer Computing (GP2PC), Rio de Janeiro, Brazil, May 2007.
- Proposal Reviewer and Panel Participant, National Science Foundation, Washington D.C., Apr. 2007.
- Third Workshop on System Management Tools for Large-Scale Parallel Systems (SMTPS), Long Beach, California, Mar. 2007.

2006

- 12th IEEE International Conference on Parallel and Distributed Systems (ICPADS'06), Minneapolis, Minnesota, Jul. 2006.
- 15th IEEE Symposium on High Performance and Distributed Computing (HPDC-15), Paris, France, Jun. 2006.
- Proposal Reviewer and Panel Participant, National Science Foundation, Washington D.C., Apr. 2006.
- Third High Performance Grid Computing Workshop (HPGCW'06), Rhodes, Greece, Apr. 2006.

- Heterogeneous Computing Workshop (HCW'06), Rhodes, Greece, Apr. 2006.
- Second Workshop on System Management Tools for Large-Scale Parallel Systems (SMTPS), Rhodes, Greece, Apr. 2006.
- 5th Workshop on Global and Peer-to-Peer Computing (WGP2PC'06), Singapore, Apr. 2006.

2005

- International Conference for High Performance Computing and Communications (SC'05), Seattle, Washington, Nov. 2005.
- Program Committee for the 1st International Workshop on Parallel Bioinspired Algorithms, Oslo, Norway, Jun. 2005
- IEEE International Conference on Pervasive Services (ICPS 2005), Santorini, Greece, Jun. 2005.
- 4th Workshop on Global and Peer-to-Peer Computing (WGP2P'05), Cardiff, U.K., May 2005.
- First Workshop on System Management Tools for Large-Scale Parallel Systems, Denver, Colorado, Apr. 2005.
- Heterogeneous Computing Workshop (HCW'05), Denver, Colorado, Apr. 2005.
- High Performance Grid Computing Workshop, Denver, Colorado, Apr. 2005.

2004

- International Conference for High Performance Computing and Communications (SC'04), Pittsburgh, Pennsylvania, Nov. 2004.
- 17th International Conference on Parallel and Distributed Computing Systems (PDCS 2004), San Francisco, California, Sep. 2004.
- 13th IEEE Symposium on High Performance and Distributed Computing (HPDC-13), Honolulu, Hawai'i, Jun. 2003.
- 3rd Workshop on Global and Peer-to-Peer Computing (WGP2P'04), Chicago, Illinois, Apr. 2004.

2003

- International Conference for High Performance Computing and Communications (SC'03), Phoenix, Arizona, Nov. 2003.
- Proposal Reviewer and Panelist, National Science Foundation, Washington, DC., Oct. 2003.
- Program Committee member for Euro-Par 2003, Klagenfurt, Austria, Aug. 2003.
- Workshop on Innovative Solutions for Grid Computing (InnoGrid'03), Melbourne, Australia, Jun. 2003.
- 12th IEEE Symposium on High Performance and Distributed Computing (HPDC-12), Seattle, Washington, Jun. 2003.
- ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP), San Diego, California, Jun. 2003.
- 3rd IEEE Symposium on Cluster Computing and the Grid (CCGrid'03), Tokyo, Japan, May 2003.
- 3rd Workshop on Global and Peer-to-Peer Computing (WGP2P'03), Tokyo, Japan, May 2003.
- International Parallel and Distributed Processing Symposium (IPDPS'03), Nice, France, Apr.

2003.

2002

- 3rd International Workshop on Grid Computing (Grid’02), Baltimore, Maryland, Nov. 2002.
- International Conference for High Performance Computing and Communications (SC’02), Baltimore, Maryland, Nov. 2002.
- 11th IEEE Symposium on High Performance and Distributed Computing (HPDC-11), Edinburgh, U.K., Aug. 2002.
- 2nd Workshop on Global and Peer-to-Peer Computing (WGP2P’02), Berlin, Germany, May 2002.

2001

- 2nd International Workshop on Grid Computing (Grid’01), Denver, Colorado, Nov., 2001.
- Metacomputing Systems and Applications Workshop (MSA’01), Valencia, Spain, Sep. 2001.
- Euro-Par’01 Conference, Manchester, U.K., Aug. 2001.
- High Performance Computing (HPC’01) Conference, Seattle, Washington, Apr. 2001.