

## Vita of José António Baptista Fortes (3/2023)

### Education:

| <i>Degree</i>             | <i>Date</i> | <i>School</i>                     |
|---------------------------|-------------|-----------------------------------|
| BSEE (Licenciatura in EE) | 1978        | Universidade de Angola            |
| MSEE                      | 1981        | Colorado State University         |
| Ph.D.                     | 1984        | University of Southern California |

### Honors and Awards:

1. Rotary Foundation Fellowship (1979-1980)
2. IEEE Computer Society Distinguished Visitor (1991-1995)
3. IEEE Fellow (1999-Present)
4. BellSouth/ATT Eminent Scholar (2001-Present)
5. AAAS Fellow (2012-Present)
6. Herbert Wertheim College of Engineering International Scholar of the Year (2017)
7. UF Term Professorship (2017-2020)
8. UF Research Foundation Professorship (2019-2022)
9. UF Teacher/Scholar of the Year (2019-2020)
10. Southeastern Conference (SEC) Faculty Achievement Award (2021)
11. ECE Research Excellence Award (2021)

### Professional Experience:

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|------------------------------|---|
| August 2001 – Present        | Professor and BellSouth/AT&T Eminent Scholar, Founding Director of the Advanced Computing and Information Systems (ACIS) Laboratory, Department of Electrical and Computer Engineering, and Department of Computer and Information Science and Engineering, University of Florida |
| January 2008 – December 2015 | Founding Director of the NSF Industry-University Cooperative Center for Cloud and Autonomic Computing   |
| January 1999 – August 2001   | Professor and Assistant Head of Education, School of Electrical and Computer Engineering, Purdue University   |

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| August 1995 – August 2001 | Professor, School of Electrical and Computer Engineering, Purdue University.   |
| June 1993 – January 1994  | Visiting Professor, Departament d'Arquitectura de Computadors, Universitat Politecnica de Catalunya (on sabbatical leave from Purdue). |
| August 1989 – August 1995 | Associate Professor, School of Electrical Engineering, Purdue University.  |
| August 1989 – August 1990 | Program Director, Microelectronics Information Processing Systems Division, National Science Foundation.                               |
| May 1987 – August 1989    | Assistant Professor, School of Electrical Engineering, Purdue University.  |
| April 1984 – May 1987     | Visiting Assistant Professor, School of Electrical Engineering, Purdue University.   |

### **Consulting Activities:**

- 1985 RCA, Advanced Technology Laboratories, Moorestown, New Jersey.
- 1988 Battelle, Research Triangle Park, North Carolina.
- 2002-2003 Expert Witness for Citrix (Testa, Hurwitz & Thibeault) in Orenshteyn v. Citrix Systems Inc., Civil Action No. 02-60478
- 2005-2006 Expert Witness for Radiant (Stroock & Stroock & Lavan) in Exigent Technology v. Radiant Telecom et al., Case No. 04-22140
- 2011-2012 Expert Witness for Bomgar (Goodwin Procter) in Wi-LAN Inc., v. Bomgar Corporation, Civil Action No. 1:12-CV-00003-AJT-TRJ
- 2013-2014 Expert Witness for IBM (FITZPATRICK, CELLA, HARPER & SCINTO) in Orenshteyn v. IBM, Inc, Docket No. 1:02-CV-5074
- 2015-2016 Expert Witness for VMWare (ORRICK, HERRINGTON & SUTCLIFFE LLP) in VMWARE, INC. v. CLOUDING CORPORATION, Case IPR2014-01305.

### **Research Grants and Contracts Received:**

1. Principal Investigator: AT&T Grant, "Expert System for the Design of Testable VLSI Circuits," January 3, 1985, \$30,000.
2. Principal Investigator: Office of Naval Research, Contract Number N00014-85-K-0588, "Design and Evaluation of Fault-Tolerant VLSI/WSI Processor Arrays," July 1, 1985 – December 31, 1987, \$134,650.
3. Principal Investigator: National Science Foundation, Grant Number MIP-8419745, "A Systematic Methodology for Designing VLSI Systolic Arrays with Applications in Pattern Recognition and Image Processing," September 15, 1985 – September 14, 1988, \$134,115.

4. Principal Investigator: David Ross Grant from Purdue Research Foundation, "Research in Programming Languages for Scientific Computation in Multiprocessing Environments," May 1, 1986 – June 30, 1988, \$14,480.
5. Equipment Grant from NCR, "Processor Array System," 1986, estimated value \$30,000.
6. Co-Principal Investigator (with S. Stevens): "Design Automation Conference 1986 Academic Fellowships," 1986, \$8,000.
7. Principal Investigator: Office of Naval Research, "Reconfiguration Schemes for Fault-Tolerant Processor Arrays," September 1, 1988 – August 31, 1991, \$274,203.
8. Principal Investigator: General Electric Co., "Digital FIR Filter Designs for Digital Product Detectors," December 1988 – September 1989, \$22,000.
9. Co-Principal Investigator (with H. J. Siegel): Office of Naval Research, "Adaptive Mixed-Mode Computation Systems for Fault-Tolerant Parallel Processing," January 1, 1990 – September 30, 1990, \$50,000.
10. Principal Investigator: General Electric Co., "Extensions to a Digital FIR Filter Design Methodology for Digital Product Detectors with Delay Compensation," January 1, 1990 – June 1, 1990, \$8,275.
11. Faculty Associate (PI - H. J. Siegel): National Science Foundation, Grant Number CDA-9015696, "Infrastructure for Parallel Processing Research," January 1, 1991 – December 31, 1995, \$1,421,980.
12. Principal Investigator: National Science Foundation, "International Conference on Application-Specific Array Processors," May 1, 1992 – October 31, 1992, \$11,600.
13. Co-Principal Investigator: National Science Foundation, Grant Number 9216655-DDM, "Models for the Design of Engineering Tasks Integration," September 15, 1992 – September 14, 1995, \$122,370 (PI - Prof. S. Y. Nof).
14. Principal Investigator: National Science Foundation, Grant Number MIP-9500673, "Data Distribution Independent Parallel Processing," May 1, 1995 – April 30, 1998, \$299,756 - includes REU (Research Experiences for Undergraduates) supplement of \$10,000.
15. Principal Investigator (Co-PI - R. Eigenmann): National Science Foundation, Grant Number ASC-9612133, "Hierarchical Processors-and-Memory Architecture for High Performance Computing," August 15, 1996 – January 31, 1997, \$67,000.

16. Principal Investigator: International Business Machines (IBM) Corporation, "A Library-based Approach to Symbolic Polynomial Manipulation on Distributed Memory Systems," June 15, 1996 – June 14, 1997, \$50,000.
17. Principal Investigator (Co-PIs - R. Eigenmann and M. Lundstrom): National Science Foundation, Grant Number MIPS 96-17372, CISE Research Instrumentation, "Symmetric Multiprocessor for Research on Parallel Architecture, Compiler, Applications and On Demand Network Computing," January 1, 1997, \$79,958.
18. Co-Principal Investigator (PI - M. Lundstrom, Co-PIs - G. Neudeck, G. Lush, and C. Takoudis): National Science Foundation, "Designing Microelectronic Technologies through a Network-Based Simulation Hub," June 1, 1997 – May 31, 2000, \$400,000.
19. Co-Principal Investigator (PI - Ron Cole, Oregon Graduate Institute): National Science Foundation, "Understanding the Role of International Collaboration in Computer Science and Engineering," September 1, 1997 – November 31, 1997, \$49,996.
20. Principal Investigator (Co-PIs - R. Eigenmann, J. Lehman, A. Choudhury, V. Taylor, L. Vidal, and J.-J. Chen): National Science Foundation, Grant Number EIA-9872516, "Integration of Computer Architecture and Parallel Programming Tools into Computer Science and Engineering Curriculum through Network-Computing Hubs," September 1, 1998 – August 31, 2001, \$400,000.
21. Principal Investigator (Co-PIs - M. Lundstrom, Z. Ben Miled, and T. Hentea): Purdue Reinvestment Program, "Systemwide Purdue Network-Computer for Collaborative Education and Research," August, 1998 – July 31, 2002, \$248,000.
22. Principal Investigator: National Science Foundation, Grant Number CCR-9970728, "Design of Machines Organized as Processor-and-Memory Hierarchies," September 1, 1999 – August 31, 2002, \$260,080.
23. Principal Investigator (Co-PIs - R. Eigenmann, V. Taylor, M. Livny): National Science Foundation, Grant Number EIA-9975275, "Network-computer for Computer Architecture Research and Education (NETCARE)," September 1, 1999 – August 31, 2003, \$1,200,000.
24. Co-Principal Investigator (PI - Ron Cole, Co-PIs - A. Klinger, C. Pu): National Science Foundation, "Western Hemisphere Collaboration in Computer Science and Engineering," August 1, 1999 – July 31, 2000, \$103,609.
25. Principal Investigator (Co-PIs – R. Cole and J. Carbonell): National Science Foundation, "US-Argentina and US-Chile Collaborative Research on Computer Science and Engineering," May 1, 2000 – April 30, 2001, \$101,000.

26. Principal Investigator: National Science Foundation, Grant Number EIA-017686, "Exploratory Research on Transnational Digital Government," March 3, 2001 – March 1, 2002, \$72,000.
27. Principal Investigator: ACM SIGMICRO gift to support network-computing research to be used in SIGMICRO website, \$1,000
28. Principal Investigator: National Science Foundation, Grant Number EIA-0135946 "ITR/SY: Design and Simulation of Biologically-inspired Nanolattice Computing Architectures," September 15, 2001 – September 14, 2004, \$2,000,000. (Co-PIs – J. Harris, J. Principe, R. Bashir, S. Datta, D. Janes, M. Lundstrom and R. Reinfenberger)
29. Principal Investigator (Co-PIs – S. Su, H. Lam, J. Carbonell, R. Cole, D. Towsley): National Science Foundation, Grant Number EIA-0131886 "Transnational Digital Government," May 1, 2002 – April 30, 2007, \$1,806,014.
30. Principal Investigator (with R. Figueiredo (PI) and P. Dinda (co-PI) at NWU): National Science Foundation, Grant Number ANI-0222828 "Collaborative Research: Resource and Data Management for Virtualized End-Resources in Computational Grids," September 1, 2002 – August 31, 2005, \$240,298..
31. Principal Investigator (Co-PIs – A. George, J. Principe, S. Su): National Science Foundation, Grant Number EIA-0224442 "Collaborative Research on Wide-Area Network Computing Using Virtual Machines," November 15, 2002 – October 31, 2006, \$515,000.
32. Principal Investigator (Co-PI – R. Figueiredo): Purdue University – National Science Foundation, Grant Number EEC-0228390 "A Proposal to Establish an NSF Network for Computational Nanotechnology (NCN)," September 15, 2002 – August 31, 2006, \$385,000.00.
33. Principal Investigator (Co-PIs – R. Figueiredo, J. Harris): Purdue University – NASA, Grant Number NCC-2-1363 "Institutes of Nanoelectronics and Computing," September 01, 2002 – August 31, 2006, \$554,329.00.
34. Principal Investigator (Co-PIs – W. Eisenstadt, J. Harris): Semiconductor Research Corporation, Grant Number 2002-RJ-1049G "Delay-Based Architectures for Nanoscale Structures," November 20, 2002 – November 19, 2004, \$40,000.
35. Principal Investigator (Co-PI – R. Figueiredo): International Business Machines (IBM) Corporation, "48 Wide Node Servers Donation," December 8, 2003, \$5,078,452.

36. Senior Personnel (PI – R. Figueiredo, Senior Personnel – H. Lam): National Science Foundation, Grant Contract Number 00052646 “Collaborative: NMI Deployment (ENG): NANO HUB,”\* October 01, 2004 – September 30, 2006, \$391,476.  
*\* (This collaborative grant proposal with Purdue University was submitted with Profs. Fortes and Lam as co-PIs ; for administrative reasons NSF requested that a single proposal be re-submitted and some of the Co-PIs be re-titled as senior personnel)*
37. Principal Investigator: Stevens Institute of Technology (U.S. Department of the Army - ARO), Proposal No. 527826-10 “The Science and Technology of Nano/Molecular Electronics: Theory, Simulation and Experimental Characterization,” July 01, 2004 – April 30, 2006, \$222,510.80.
38. Principal Investigator (Co-PI – R. Figueiredo): International Business Machines (IBM) Corporation, “Grid Computing on Virtual Machines,” July 2002, \$108,600.00.
39. Principal Investigator (Co-PI – R. Figueiredo): International Business Machines (IBM) Corporation, “Virtualized Grids for On-demand Provisioning,” July 2003, \$271,586.00.
40. Co-Principal Investigator (PI – Roitberg, Co-PI – R.. Figueiredo, E. Deumens): International Business Machines (IBM) Corporation, “Autonomic Computing Applied to Biomolecular Simulations,” (Equipment grant; Two 14-node clusters), April 2005, \$210,000.00.
41. Principal Investigator: U.S. Department of the Army (ARO), Grant Number DAAD-19-01-1-0592, “Specialized Computational Resources for Web-Enabled Memory-Intensive Nano-and-Molecular Electronics Simulation” (Equipment Proposal), May 2005, \$200,000.
42. Principal Investigator (Co-PI – R.. Figueiredo): Intel Corporation, University of Florida Project #00058412 “Virtualized Data Centers for Grid-Computing and Enterprise Applications,” October 1, 2005 – September 30, 2006, \$99,000.
43. Co-Principal Investigator (PI – R. Figueiredo, Co-PIs – J. Davis, Y. P. Sheng): National Science Foundation, Proposal Award No. SCI-0537455 “CI-TEAMS: Coastal and Estuarine Science Cyberinfrastructure: Training and Deployment,” December 1, 2005 – November 30, 2009, \$250,000.
44. Principal Investigator (Co-PIs – J. Principe, R. Figueiredo, J. Sanchez, and L. Hermer-Vazquez): National Science Foundation, Proposal Award No. CNS-0540304 “DDDAS-TMRP: Dynamic Data Driven Brain Machine Interfaces,” January 2006 – December 2009, \$954,750.

45. Principal Investigator (Co-PI – R. Figueiredo): Intel Corporation, University of Florida Project 00061265 “QoS in a Virtualized Data Center,” July 1, 2006 – June 30, 2007, \$80,000. (Continuing 3 yr grant through June 2009 for total of \$240,000.)
46. Principal Investigator (Co-PI – R. Figueiredo): International Business Machines (IBM) Corporation, “Event-Driven Computing for Brain-Machine Interfaces and Information Processing,” July 2006, \$163,535.00 (Equipment grant; Two 14-node clusters).
47. Principal Investigator: Northrop-Grumman Corporation, “Research on Grid Computing and Virtualization,” November 2006, \$25,000.00.
48. Principal Investigator (Co PIs – R. Figueiredo, K. Keahey): National Science Foundation, Proposal Award No. 0721867 “SDCI NMI New: Middleware for Missing Links in Virtualized Grids,” August 2007 – August 2010, \$700,000.00.
49. Co-Principal Investigator (PI – T. Li): National Science Foundation, Proposal Award No. 0720476 “CSR---SMA: Characterizing, Modeling and Mitigating Soft Error Vulnerability in Multithreaded and Multi-Core Execution Environments,” August 2007 – August 2008, \$50,000.00.
50. Principal Investigator (Co-PI – R. Figueiredo): National Science Foundation, Proposal Award No. 0733967 “Collaborative Research; Planning of a Center for Cloud and Autonomic Computing,” August 2007 – August 2008, \$10,000.00.
51. Co-Principal Investigator (PI – S. Sinnott): National Science Foundation, Proposal Award No. 0742580 “Atomic-scale Friction Research and Education Synergy Hub (AFRESH),” September 2007 – September 2010, \$203,000.00.
52. Principal Investigator (Co-PI – R. Figueiredo): National Science Foundation, Proposal Award No. 0785896 “Center for Cloud and Autonomic Computing,” January 2008 – December 2014, \$683,029.00
53. Principal Investigator (Supplement): National Science Foundation, Proposal Award No. 0758596 “Center for Cloud and Autonomic Computing,” January 2008, \$67,000.00
54. Principal Investigator (Supplement): National Science Foundation, Proposal Award No. 0758596 “Center for Cloud and Autonomic Computing,” January 2008, \$50,000.00.
55. Principal Investigator (Co-PI – R. Figueiredo): CAC Intel Membership, “Center for Cloud and Autonomic Computing Membership,” January 2008 – December 31, 2011, \$140,000.00.

56. Principal Investigator (Co-PI – R. Figueiredo): CAC Northrup-Grumman, “Center for Cloud and Autonomic Computing Membership,” January 2008 – December 31, 2010, \$87,500.00.
57. Co-Principal Investigator (PI – R. Figueiredo, Co-PIs – J. Peir, P. Boykin, T. Li): National Science Foundation, Proposal Award No. 0751112 “CRI: CRD Collaborative Research: Archer-Seeding a Community – based Computing Infrastructure for Computer Architecture Research and Education,” April 2008 – April 2012, \$350,000.00.
58. Principal Investigator (Co-PI – J. Principe, J. Sanchez, L. McIntyre, L. Moroz): National Science Foundation, Proposal Award No. 0821622 “MRI: Acquisition of Instrumentation for Coupled Experimental-Computational Neuroscience and Biology Research,” July 2008 – June 2011, \$516,000.00.
59. Principal Investigator (PI – J. Fortes): National Science Foundation, Proposal Award No. 0836228 “Workshop on Instrumentation Needs of Computer and Information Science and Engineering Research,” July 2008 – July 2010, \$135,000.00.
60. Principal Investigator (Co-PI – R. Figueiredo): CAC Citrix Membership, “Center for Cloud and Autonomic Computing Membership,” January 2008 – December 31, 2011, \$140,000.00.
61. Principal Investigator (Co-PI – R. Figueiredo): CAC IBM Membership, “Center for Cloud and Autonomic Computing Membership,” January 2008 – December 31, 2009, \$70,000.00.
62. Principal Investigator (Co-PI – R. Figueiredo): CAC Merrill-Lynch Membership, “Center for Cloud and Autonomic Computing Membership,” January 2009 – December 31, 2009, \$35,000.00.
63. Principal Investigator (Co-PI – R. Figueiredo): CAC Microsoft Membership, “Center for Cloud and Autonomic Computing Membership,” January 2009 – December 31, 2010, \$70,000.00.
64. Principal Investigator (Co-PI – R. Figueiredo) (Supplement): National Science Foundation, Proposal Award No. 0932023 “Center for Cloud and Autonomic Computing”, August 2009, \$50,000.00.
65. Co-Principal Investigator (PI – T. Li): National Science Foundation, Proposal Award No. 0916384 “SHF: Small: Leveraging the Interplay between Process Variation and NBTI in Nanoscale Reliable NoC Architecture Design,” September 2009 - August 2012, \$415,092.00.



66. Principal Investigator (Co-PI – R. Figueiredo): National Science Foundation, Proposal Award No. 0855123 “Collaborative Research, II-NEW: An Instrumented Data Center Infrastructure for Research on Cross-Layer Autonomics,” August 2013 - May 2012, \$210,000.00.
67. Co-Principal Investigator (PI – G. Fox, Co-PIs – W. Smith, K. Keahey, R. Wolski, Indiana University): National Science Foundation Proposal Award No. 0910812 “FutureGrid: An Experimental, High-Performance Grid Test-bed,” September 2009 – October 2013, \$9,999,999.00.
68. Principal Investigator (PI - J. Ramirez, Co-PI - T. Anagnos, R. Eigenmann, E. Rathje. B. Fossum, Purdue): National Science Foundation, Proposal Award No. “NEES Operations: FY2010 - FY 2014,” October 2009 - October 2014, \$175,000.00.
69. Principal Investigator (Co-PI – R. Figueiredo): National Science Foundation, Proposal Award No. 0932023, "TIE: UF-FIU inter-I/UCRC collaboration to explore autonomic computing for the TerraFly server system," August 2009 – August 2011, \$50,000.
70. Co-Principal Investigator (PI- J. Principe): SUNY: “DARPA: Creating the Synthetic Brain through Hybrid Computational and Biological Systems: Repairing and Replacing Neural Networks,” January 2010 – December 2014, \$1,805,000.00.
71. Principal Investigator (PI – J. Fortes): National Science Foundation, Proposal Award No. 1042644, "Collaborative Research: Adaptive IT appliance for collaborative review of child-death cases," September 2010 – September 2011, \$120,000.
72. Principal Investigator (Co-PI – R. Figueiredo): National Science Foundation, Proposal Award No. 1032038, "Autonomic Middleware for Self-protection, Data Transfers, and Anomaly Analytics as a Service," July 2010 – July 2012, \$135,000.
73. Principal Investigator (Co-PI – R. Figueiredo): National Science Foundation, Proposal Award No. 1127965, “Collaborative Research: Unified Cloud Computing and Management,” August 2011 – August 2012, \$50,000.00.
74. Co-Principal Investigator (PI – L. Page): National Science Foundation, Proposal Award No. 1115210, “Digitization HUB: A Collections Digitization Framework for the 21st Century (iDigBio)”, July 1, 2011 – June 30, 2016, \$9,696,060.00.
75. Co-Principal Investigator (PI – M. Tsugawa): National Science Foundation, Proposal Award No. 1139707, “IT Virtualization for Disaster Mitigation and Recovery”, August 2011 – August 2012, \$50,000.00.

76. Principal Investigator (PI – F. Winston, Children’s Hospital of Philadelphia, Co-PI – N. Kassam-Adams, Children’s Hospital of Philadelphia): National Science Foundation, Proposal Award No. 1127158, “AIR: Engineering the Evaluation of Online Health and Wellness Promotion Applications”, August 2011 – August 2013, \$429,622.00.
77. Principal Investigator (PI – P. Papadopoulos, UC San Diego, Co-PI – P. Arzberger, UC San Diego): National Science Foundation, Proposal Award No. 1140394, “US and China Workshop Series to Build a Collaborative Framework for Developing Shared Software Infrastructure”, September 2011 – September 2012, \$25,053.00.
78. Principal Investigator (Co-PI – R. Figueiredo) (REU-Supplement): National Science Foundation, Proposal Award No. 0758596 “Center for Cloud and Autonomic Computing”, August 2012, \$8,000.00.
79. Principal Investigator (PI – J. Fortes): National Science Foundation, Proposal Award No. 1232197, “Second Workshop on Instrumentation Needs of Computer and Information Science and Engineering (INCISE2) Research”, May 1, 2012 - April 30, 2016 \$45,000.00.
80. Co-Principal Investigator (PI – A. Matsunaga): National Science Foundation, Proposal Award No. 1240171, “Enabling continued operation of IT services and infrastructures during floods and other disasters”, June 15, 2012 – June 14, 2013, \$40,000.00.
81. Co-Principal Investigator (PI – E. Deumens, Co-PI – P. Avery, Xiaolin Li, S. Asseng): National Science Foundation, Proposal Award No. 1245880, “CC-NIE Network Infrastructure: 100Gig Connection to FLR”, October 1, 2012 – September 30, 2014, \$385,405.00.
82. Co-Principal Investigator (PI – P. Arzberger, UC San Diego): National Science Foundation, Proposal Award No. 1234983, “SAVI: PRAGMA - Enabling Scientific Expeditions and Infrastructure Experimentation for Pacific Rim Institutions and Researchers”, October 1, 2012 – July 31, 2017, \$5,693,064.00.
83. Principal Investigator (Co-PI – R. Figueiredo): CAC Samsung Membership, “Center for Cloud and Autonomic Computing Membership,” January 2013 – December 31, 2013, \$100,000.00.
84. Principal Investigator (Co-PI – R. Figueiredo): CAC Intel Membership, “Center for Cloud and Autonomic Computing Membership,” January 1 – December 31, 2013, \$35,000.00.

85. Principal Investigator (Co-PIs – R. Figueiredo, M. Tsugawa): National Science Foundation, Proposal Award No. 1265341, “EAGER: Collaborative Research: Model-Based Autonomic Cloud Computing Software Technology”, January 1, 2013 – July 31, 2016, \$167,000.00. (Collaborative proposal led by UF with co-PI P. Dinda at Northwestern University receiving additional funding of \$82,000).
86. Co-Principal Investigator (PI – D. Soltis, UF): National Science Foundation, Proposal Award No. 1458640, “Collaborative Research: ABI Innovation: Connecting Resources to Enable Large-scale Biodiversity Analysis”, July 15, 2015 – June 30, 2018, \$834,828.00.
87. Principal Investigator (Co-PIs – A. Matsunaga, M. Tsugawa): National Science Foundation, Proposal Award No. 1535086, “SI2-SSE: Human- and Machine-Intelligent Software Elements for Cost-Effective Scientific Data Digitization”, August 1, 2015 – July 31, 2018, \$488,048.00.
88. Principal Investigator: National Science Foundation, Proposal Award No. 1550126, “US-EA CENTRA: US – East Asia Collaborations to Enable Transnational Cyberinfrastructure Applications”, October 1, 2015 – September 20, 2018, \$500,000.
89. Co-Principal Investigator (PI – Larry Page): National Science Foundation, Proposal Award No. 1547229, “Digitization: iDigBio: Integrated Digitized Biocollections Phase 2”, September 1, 2016 – August 31, 2021 \$15,486,746.
90. Principal Investigator (Co-PIs - Christopher McCarty, Renato Figueiredo, Erik Bredfeldt, Lila Stewart), “Data-centric Modeling and Support of the Lifecycle of Gainesville Businesses”, May 1, 2017 - March 31, 2018.
91. Principal Investigator: National Science Foundation, Proposal Award No. 1839201, “EAGER: Towards the Web of Biodiversity Knowledge: Understanding Data Connectedness to Improve Identifier Practices.”, October 1, 2018 – September 30, 2020, \$299,973.00.
92. Co-Principal Investigator: National Science Foundation, Proposal Award No. 1930007 (PI – Doug Soltis, co-PI: Pamela Soltis): “CIBR: Collaborative Research: Integrating data communities with BiotaPhy: a computational platform for data-intensive biodiversity research and training,” August 15, 2019- July 31, 2022, \$880,172.
93. Principal Investigator: National Science Foundation, Proposal Award No. 1951816 (co-PIs: Renato Figueiredo, Yan Wang, Ryan Sharston and Richard Hayes): “SCC-PG: Coordinated Safety Management Across Smart Communities,” July 1, 2020 – June 30, 2021, \$150,000.

94. Co-Principal Investigator: National Science Foundation, Proposal Award No. 2027654 (PI: Gil Nelson, co-PIs: Austin Mast, Pamela Soltis, David Blackburn): “DigBio: Sustaining the digitization, mobilization, accessibility, and use of biodiversity specimen data in U.S. museum and academic collections,” May 5, 2021- August 31, 2026, \$19,995,068.00.

### **PhD Thesis Supervision Completed:**

1. William Carlson, “A Model and Tool for the Analysis of Combined Data Flow and Control Flow Multiprocessors,” May 1988. First employment as an Assistant Professor at University of Wisconsin. Currently employed by the Institute of Defense Analysis.
2. Darwen Rau, “Destination-Tag Routing Schemes for Multistage Interconnection Networks with Redundant Paths,” Dec. 1988. First employment at AT&T. Currently employed at Aricent, Inc.
3. Noe Lopez-Benitez, “Detailed Modeling and Reliability Estimation of Fault-Tolerant Processor Arrays,” Aug. 1989. Currently a Professor of the Department of Computer Science at Texas Tech University, Lubbock, TX.
4. Mengly Chean, “Hardware Reconfiguration for Fault-Tolerant Processor Arrays,” Aug. 1989. First employed at Shell Research. Currently employed at Federal Reserve Bank of Dallas.
5. Yi-Xiang Wang, “Approximate Evaluation of Reliability, Mean-Time-To-Failure and Optimal Redundancy of Fault-Tolerant Processor Arrays,” May 1990.
6. Weijia Shang, “Scheduling, Partitioning and Mapping of Uniform Dependence Algorithms on Processor Arrays,” May 1990. Currently an Associate Professor of the Department of Computer Engineering at Santa Clara University, Santa Clara, CA.
7. Hasan Cam, “Design and Permutation Routing Algorithms of Rearrangeable Networks,” May 1992. First employed as an Assistant Professor for the Computer Science and Engineering Department in the School of Computing and Informatics at Arizona State University, Tempe, AZ. Currently employed at Cardinal Intellectual Property, Evanston, Illinois.
8. Hyuk Jae Lee, “Systematic Optimization of Basic Linear Algebra Computations for Distributed Memory Systems,” Aug. 1996. First employed as an Assistant Professor at Louisiana Tech University. Currently a tenured professor at Seoul National University, Korea.

9. Hemal Shah, "Symbolic Polynomial Manipulation on Distributed Memory Machine: Towards a Library-Based Approach," May 1997. First employed as a Senior Systems Architect at Intel. Currently employed as an Associate Technical Director at Broadcom Corporation.
10. Zina Ben Miled, "A Hierarchical Heterogeneous Solution to High Performance Cost-Efficient Computing," Aug. 1997. First employed as an Assistant Professor for the Department of Computer and Electrical Engineering at Indiana University – Purdue University, Indianapolis, IN. Currently a tenured faculty member at the same institution.
11. Nirav Kapadia, "On the Design of a Demand-Based Network-Computing System: the Purdue University Network-Computing Hubs," Aug. 1999. First employment at Capital One. Currently employed as Vice President, Portfolio Strategy at Fujitsu America.
12. Jeffrey Bradford, "Hardware and Software Mechanism for Multithreading in Uniprocessors and Heterogeneous Multiprocessors," May 2001. First employment at IBM. Currently at Microsoft.
13. Renato Figueiredo, "On the Performance and Programming of Heterogeneous Distributed Shared-Memory Multiprocessors Organized as Processor-and-Memory Hierarchies," July 2001. First employed as Assistant Professor at Northwestern University. Currently an Associate Professor in the Department of Electrical and Computer Engineering at the University of Florida, Gainesville, FL.
14. Rajesh Subramanyan, "Scalable SNMP-Based Monitoring Systems for Network Computing," Aug. 2002. First employed as a Visiting Assistant Professor in Computer Science Department at Purdue University. Currently Director of Engineering at Siemens Healthcare Diagnostics.
15. Sumalatha Adabala, "Execution of Unmodified Applications on Distributed Storage and Compute Resources," Aug. 2004. First employment as a Senior Engineer at Microsoft. Currently employed at a start-up company working on data analytics.
16. Wessam Hassanein, "Processing-in-Memory Techniques for Hiding Memory Access Latency," July 2004. First employed as an Assistant Professor for the Department of Electrical and Computer Engineering at the University of Calgary, Calgary, Alberta, Canada. Current position unknown.
17. Maurício Tsugawa, "On the Design, Performance and Management of Virtual Networks for Grid Computing," Aug. 2009. First employed as a Research Assistant Scientist for the Department of Electrical and Computer Engineering at the University of Florida, Gainesville, FL. Currently working at HP.

18. Xin Fu, (co-advised; lead advisor: Tao Li), “Characterizing, Modeling and Mitigating Processor Vulnerability and Variability in Light of Small-Scale Processing Technology,” August 2009. First employed as an Assistant Professor at the University of Kansas. Currently a faculty member at University of Houston.
19. Andrea Matsunaga, “Application Modeling for Optimized Execution in Computational Clouds,” 2010. First employed as a Post Doctoral Associate for the Department of Electrical and Computer Engineering at the University of Florida. Currently at Amazon.
20. Jing Xu, “Autonomic Application and Resource Management in Virtualized Distributed Computing Systems,” 2011. First employed as instructor at Florida International University. Currently working at VMware.
21. Prapaporn Rattanathamrong, “Real-Time Scheduling of Ensemble Systems with Limited Resources,” 2011. First and currently employed as faculty member in Department of Computer Science, Faculty of Science and Technology, Thammasat University, Thailand.
22. Selvi Kadirvel, “Techniques and Tools for an Autonomic Approach to Fault and Performance Management in Map-Reduce,” 2013. First employed by VMWare. Currently at a startup company working on datacenter management.
23. Gil Jae Lee, “Collaborative Autonomic Approach To Self-Tuning Of Hadoop Performance,” 2018. First employed by University of Florida.
24. Icaro Alzuru, “Human-Machine Extraction of Information from Biological Collections,” 2020. First employed by Amazon.
25. Johnson, Hailey, (co-advised; lead advisor: Peter Adams), “Reusable Geoscientific Software Design and Applications in Coastal Morphology Research and Education,” 2020. First employed by NCAR.

### **Master's Thesis Supervision Completed:**

1. Matthew O’Keefe, “A Comparative Study of Two Systematic Design Methodologies for Systolic Arrays,” May 1986.
2. Muhammad Samad, “DEFT – A Knowledge-Based Design-for-Testability System,” Nov. 1986.
3. Valerie Taylor, “RAB: A Tool for Systematically Mapping Numerical Algorithms into Bit-Level Processor Arrays,” Nov. 1986
4. Craig Hughes, “Delay Based Artificial Neural Systems for VLSI,” Aug. 1988.

5. Zina Ben Miled, "Quadrature and In-phase Separation with Arbitrary Delay Compensation," May 1990.
6. Nirav Kapadia, "A SIMD Sparse Matrix-Vector Multiplication Algorithm for Computational Electromagnetics and Scattering Matrix Models," May 1994.
7. Michael Davis, "Delay-Based Computing: Implementation Issues in CMOS and Nanotechnologies," May 2004.
8. Sanjee Sanjeevan, "A Service-Oriented, Scalable, Secure Framework for Grid-Enabling Legacy Scientific Applications," Dec. 2005
9. Wenjie Zhang, "Using Hadoop to Accelerate the Analysis of Semiconductor-Manufacturing Monitoring Data," May 2014.
10. Sarfaraz Soomro, "Mapping Specifications for Ranked Hierarchical Trees in Data Integration Systems", August 2014.

### **Master's and PhD Thesis Students Currently Being Supervised:**

|                      |       |
|----------------------|-------|
| Michael Elliott      | Ph.D. |
| Srivattsan Sridharan | Ph.D. |

### **Research Book Contributions and Books Published:**

1. J. A. B. Fortes, K. S. Fu, and B. W. Wah, "Systematic Design Approaches for Algorithmically Specified Systolic Arrays," *Computer Architecture: Concepts and Systems*, edited by V. Milutinovic, Elsevier Science Publishing Co., Inc., pp. 454-494, 1987.
2. J. A. B. Fortes, "Algorithm Reconfiguration Techniques for Gracefully Degradable Processor Arrays," *Systolic Arrays*, edited by W. Moore, A. McCabe, R. Urquhart, Adam Hilger, 1987 (selected papers presented at 1st International Workshop on Systolic Arrays, Oxford, 2-4 July 1986), pp. 259-268, 1986.
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5. M. Tsugawa, A. Matsunaga, J. A. B. Fortes, "Collaborative Cyberinfrastructure for Transnational Digital Government," *Digital Government: Advanced Research and Case Studies*, edited by Hsinchun Chen, Lawrence Brandt, Valerie Gregg, Roland Traunmüller, Sharon Dawes, Eduard Hovy, Ann Macintosh, and Catherine A. Larson, Springer Verlag, 2007.

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  125. E. Taylor, J. Han, J. A. B. Fortes, "Towards the Accurate and Efficient Reliability Modeling of Nanoelectronic Circuits," 2006 IEEE Conference on Nanotechnology (IEEE-NANO 2006), Cincinnati, Ohio, July 16-20, 2006.
  126. E. Taylor, J. Han, J. A. B. Fortes, "An Investigation into the Maximum Tolerable Error Rate of Majority Gates for Reliable Computation," 33rd Annual International Symposium on Computer Architecture - IEEE International Workshop on Design and Test of Defect-Tolerant Nanoscale Architectures, Boston, MA, June 17, 2006.

127. X. Fu, T. Li, J. A. B. Fortes, "Sim-SODA: A Unified Framework for Architectural Level Software Reliability Analysis," 33rd Annual International Symposium on Computer Architecture - Benchmarking and Simulation: Workshop on Modeling, Boston, MA, June 18, 2006.
128. J. A. B. Fortes, "Probabilistic Computation," 2006 IEEE Conference on Nanotechnology (IEEE-NANO 2006), Cincinnati, Ohio, July 16-20, 2006. (Abstract Only)
129. X. Fu, J. Poe, T. Li and J. A. B. Fortes, "Characterizing Microarchitecture Soft Error Vulnerability Phase Behavior," International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems, September 2006.
130. E. Taylor and J. A. B. Fortes, "Device Variability Impact on Logic Gate Failure Rates," Government Microcircuit Application and Critical Technology Conference (GOMACTech-07), Lake Buena Vista, Florida, March 19-22, 2007.
131. W. Zhang, X. Fu, T. Li and J. A. B. Fortes, "An Analysis of Microarchitecture Vulnerability to Soft Errors on Simultaneous Multithreaded Architectures," International Symposium on Performance Analysis of Systems and Software (ISPASS), April 2007.
132. A. Matsunaga, M. Tsugawa and J. A. B. Fortes, "Integration of Text-based Applications into Service-Oriented Architectures for Transnational Digital Government," 8th Annual International Conference on Digital Government Research, Philadelphia, PA, May 20-23, 2007.
133. J. DiGiovanna, L. Marchal, P. Rattanathamrong, M. Zhao, S. Darmanjian, B. Mahmoudi, J. Sanchez, J. Príncipe, L. Hermer-Vazquez, R. Figueiredo and J. A. B. Fortes, "Towards Real-Time Distributed Signal Modeling for Brain Machine Interfaces," International Conference on Computational Science (ICCS 2007) - DDDAS Workshop, Graduate University of the Chinese Academy of Sciences, Beijing, China, May 27-30, 2007.
134. J. Xu, M. Zhao, M. Yousif, R. Carpenter, J. A. B. Fortes, "On the Use of Fuzzy Modeling in Virtualized Data Center Management," International Conference on Autonomic Computing (ICAC), Jacksonville, FL, June 11-15, 2007.
135. J. DiGiovanna, L. Marchal, P. Rattanathamrong, M. Zhao, S. Darmanjian, B. Mahmoudi, J. Sanchez, J. Príncipe, L. Hermer-Vazquez, R. Figueiredo, and J. A. B. Fortes, "Towards Real-Time Distributed Signal Modeling for Brain Machine Interfaces," in International Conference on Computational Science, 2007.
136. R. Figueiredo, J. C. Sanchez, J. C. Príncipe, J. A. B. Fortes, M. Zhao, "BMI Cyberworkstation: Enabling Dynamic Data-Driven Brain-Machine Interface Research Through Cyberinfrastructure" 30th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Vancouver, British Columbia, Canada, August 20-24, 2008.
137. B. Mahmoudi, J. A. B. Fortes, J. C. Principe, J. C. Sanchez, "Co-Adaptive Brain Machine Interfaces via Reinforcement Learning", Neural Interfaces Conference, Cleveland, Ohio, 2008.

138. X. Fu, T. Li and J. A. B. Fortes, "Combined Circuit and Microarchitecture Techniques for Effective Soft Error Robustness in SMT Processors," International Conference on Dependable Systems and Networks (DSN), June 2008
139. X. Fu, W. Zhang, T. Li and J. A. B. Fortes, "Optimizing Instruction Queue Reliability to Soft Error on Simultaneous Multithreaded Architectures," International Conference on Parallel Processing (ICPP), September 2008.
140. X. Fu, T. Li and J. A. B. Fortes, "ORBIT: Effective Instruction Queue Soft-error Vulnerability Mitigation on Simultaneous Multithreaded Architectures using Operand Readiness-based Instruction Dispatch," International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD), October 2008.
141. X. Fu, T. Li and J. A. B. Fortes, "NBTI Tolerant Microarchitecture Design in the Presence of Process Variation," 41st International Symposium on Microarchitecture (Micro-41 2008), November 2008.
142. K. Keahey, R. Figueiredo, J. A. B. Fortes, T. Freeman, M. Tsugawa, 'Science Clouds: Early Experiences in Cloud Computing for Scientific Applications'. Cloud Computing and Its applications, October 22-23, 2008.
143. M. Tsugawa, and J. A. B. Fortes, 'Characterizing User-level Network Virtualization: Performance, Overheads, and Limits'. In Proceedings of the 4th IEEE International Conference on e-Science, December 10-12, 2008. ([http://escience2008.iu.edu/sessions/network\\_virtualization.shtml](http://escience2008.iu.edu/sessions/network_virtualization.shtml))
144. A. Matsunaga, M. Tsugawa, and J. A. B. Fortes, 'CloudBLAST: Combining MapReduce and Virtualization on Distributed Resources for Bioinformatics Applications'. In Proceedings of the 4th IEEE International Conference on e-Science, December 10-12, 2008.
145. X. Fu, T. Li and J. A. B. Fortes, 'Soft Error Vulnerability Aware Process Variation Mitigation,' The 15th International Symposium on High-Performance Computer Architecture, Raleigh, North Carolina - February 14-18, 2009.
146. R. Figueiredo, P. O. Boykin, J. A. B. Fortes, T. Li, J. Peir, D. Wolinsky , L. John, D. Kaeli , D. Lilja, S. McKee, G. Memik, Alain Roy, and G. Tyson, 'Archer: A Community Distributed Computing Infrastructure for Computer Architecture Research and Education', In Proceedings of The 4th International Conference on Collaborative Computing (CollaborateCom 2008), November 13-16, 2008.
147. J. Xu, J. A. B. Fortes, "Cooperative Autonomic Management in Dynamic Distributed Systems", The 11th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2009), Lyon, France, Nov. 3-6, 2009.
148. M. Kumar , R. Newman, J. Fortes , D. Durbin, and F. Winston, "An IT Appliance for Remote Collaborative Review of Mechanisms of Injury to Children in Motor Vehicle Crashes", In Proc. 5th International Conf. on Collaborative Computing: Networking, Applications and Worksharing, Washington DC, Nov 2009

149. M. Tsugawa, A. Matsunaga, and J. Fortes, "User-level Virtual Networks Support for Sky Computing", The 5th IEEE International Conference on e-Science (e-Science 2009), Oxford, UK, Dec 9-11 2009.
150. A. Matsunaga , and J. A. B. Fortes , "On the use of machine learning to predict the time and resources consumed by applications", In Proceedings of the 10th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, May 2010.
151. P. Rattanathamrong , J. A. B. Fortes , "Real-time Scheduling of Mixture-of-Experts Systems with Limited Resources.", The 13th International Conference on Hybrid Systems: Computation and Control April 12-16, 2010, Stockholm, Sweden.
152. A. Matsunaga , M. Tsugawa , and J. A. B. Fortes , 'Scaling-out CloudBLAST: Combining Technologies to BLAST on the Sky'. In Third IEEE International Scalable Computing Challenge (SCALE 2010), May 2010.
153. S. Kadirvel , J. A. B. Fortes , "Towards IT Systems Capable of Managing their Health". Monterey Workshop March 31- April 2, 2010 "Modeling, Development and Verification of Adaptive Computer Systems: The Grand Challenge for Robust Software", Microsoft Research Center, Redmond, USA, March 31 - Apr 2, 2010
154. X. Fu, T. Li, J. A. B. Fortes, "Architecting Reliable Multi-core Network-on-Chip for Small Scale Processing Technology, The 40th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN 2010)(acceptance rate: 23.2%).
155. P. Rattanathamrong, P. Raiturkar, M. Zhao, B. Mahmoudi, J. DiGiovanna, J. Principe, R. Figueiredo, J. C. Sanchez, and J. A. B. Fortes, "Model Development, Testing and Experimentation in a CyberWorkstation for Brain-Machine Interface Research", 32nd Annual International IEEE EMBS Conference (EMBC 2010), September 2010
156. P.Rattanathamrong, A. Matsunaga, J. A. B. Fortes, "BMI CyberWorkstation: a Cyberinfrastructure for Collaborative Experimental Research on Brain-Machine Interfaces", 6th International ICST Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom 2010), October 2010
157. S. Kadirvel, J. A.B. Fortes, "Self-Caring IT Systems – A Proof-of-Concept Implementation in Virtualized Environments", 2nd IEEE International Conference on Cloud Computing Technology and Science (CloudCom), Indianapolis, USA, November 2010.
158. G. von Laszewski, G.C. Fox, Wang Fugang , A.J. Younge, A. Kulshrestha, G.C. Pike, W. Smith, J. Vöckler, R.J. Figueiredo, J. Fortes, K. Keahey, "Design of the FutureGrid Experiment Management Framework", IEEE Gateway Computing Environments Workshop (GCE) at Supercomputing (SC), New Orleans, LA, November 14, 2010.
159. M. Tsugawa, P. Riteau, A. Matsunaga, J. Fortes, "User-level Virtual Networking Mechanisms to Support Virtual Machine Migration Over Multiple Clouds", IEEE

- International Workshop on Management of Emerging Networks and Services (IEEE MENS 2010), December 2010.
160. J. Xu and J. A. B. Fortes. 2010. "Multi-Objective Virtual Machine Placement in Virtualized Data Center Environments", 2010 IEEE/ACM Int'l Conference on Green Computing and Communications & Int'l Conference on Cyber, Physical and Social Computing(GREENCOM-CPSCOM '10), December 18-20, 2010.
  161. P. Rattanathamrong, A. Matsunaga, A. Brockmeier, J. C. Sanchez, J. Principe and J. A. B. Fortes, "Towards Closed-Loop Brain-Machine Experiments across Wide-Area Networks ", 5th International IEEE EMBS Conference on Neural Engineering, Cancun, Mexico, April 27-May 1, 2011.
  162. L. Wang, M. Zhao, J. Xu and J. A. B. Fortes, "Adaptive Virtual Resource Management with Fuzzy Model Predictive Control", The 6th International Workshop on Feedback Control Implementation and Design in Computing Systems and Networks (FeBID 2011) held in conjunction with The 8th International Conference on Autonomic Computing (ICAC 2011), Karlsruhe, Germany, June 14, 2011.
  163. J. Xu, J. A. B. Fortes, "A Multi-objective Approach to Virtual Machine Management in Datacenters", The 8th International Conference on Autonomic Computing, Karlsruhe, Germany, June 14-18, 2011.
  164. P. Rattanathamrong and J. A. B. Fortes, "Improved Real-Time Scheduling for Periodic Tasks on Multiprocessors," The International Conference on High Performance Computing & Simulation (HPCS), Istanbul, Turkey, July 4-8, 2011.
  165. S. Kadirvel and J.A.B. Fortes, "Towards Self-Caring MapReduce: Proactive Fault Handling for Reducing Execution-Time Penalties," The International Conference on High Performance Computing & Simulation (HPCS), Istanbul, Turkey, July 4-8, 2011.
  166. Lixi Wang, Jing Xu, Ming Zhao, José A. B. Fortes, "Adaptive Virtual Resource Management with Fuzzy Model Predictive Control," 6th International Workshop on Feedback Control Implementation and Design in Computing Systems and Networks (FeBID, co-held with ICAC'11), July 14-18, 2011.
  167. L. Wang, J. Xu, M. Zhao, Y. Tu and J.A.B. Fortes, "Fuzzy Modeling based Resource Management for Virtualized Database Systems," The 19<sup>th</sup> Annual Meeting of the IEEE International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS), Singapore, July 25 – 27, 2011.
  168. P. Rattanathamrong and J. A. B. Fortes, "Mode Transition for Online Scheduling of Adaptive Real-Time Systems on Multiprocessors", The 17th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA), Toyama, Japan, August 28-31, 2011.
  169. M.Tsugawa, R. Figueiredo, J.A.B. Fortes, T. Hirofuchi, H. Nakada and R. Takano, "On the use of virtualization technologies to support uninterrupted IT services: A case study with lessons learned from the Great East Japan

- Earthquake”, 2012 IEEE International Conference on Communications (ICC), June 10, 2012, pages 6324-6328
170. S. Kadirvel and J. A. B. Fortes, “Autonomic Approach to Fault and Performance Management in Map-Reduce Clusters”, 42nd Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN), Boston, Massachusetts, June 25 - 28, 2012
  171. S. Kadirvel and J. A. B. Fortes, “A Grey-box Approach to Performance Prediction in Map-Reduce based Platforms”, in International Conference on Computer Communication Networks (ICCCN), Munich, Germany, July 30 – August 2, 2012.
  172. X. Fu, T. Li, and J. A. B. Fortes, “Reliable Express Virtual Channel based Network-on-Chip under the Impact of Technology Scaling”, International Symposium on Quality Electronic Design (ISQED), Santa Clara, CA, March 5-6, 2013.
  173. Tae Seung Kang, Mauricio Tsugawa , Jose Fortes, Takahiro Hirofuchi, “Reducing the Migration Times of Multiple VMs on WANs Using a Feedback Controller,” 2013 IEEE 27th International Parallel and Distributed Processing Symposium Workshops & PhD Forum (IPDPSW), May 5, 2013, pp. 1480-1489.
  174. Selvi Kadirvel, Jeffrey Ho, Jose Fortes, “Fault Management in MapReduce through Early Detection of Anomalous Nodes,” International Conference on Autonomic Computing, June, 2013.
  175. Andréa Matsunaga, Alex Thompson, Renato J Figueiredo, Charlotte C Germain-Aubrey, Matthew Collins, Reed S Beaman, Bruce J MacFadden, Greg Riccardi, Pamela S Soltis, Lawrence M Page and José AB Fortes, “A Computational-and Storage-Cloud for Integration of Biodiversity Collections,” 2013 IEEE 9th International Conference on eScience (eScience), October 22, 2013, pp. 78-87.
  176. Prapaporn Rattanatamrong and Jose A. B. Fortes, “Fuzzy Scheduling of Real-Time Ensemble Systems, 2014 High Performance Computing and Simulation Conference (HPCS 2014), July 21 - July 25, 2014, Bologna, Italy.
  177. Sarfaraz Soomro, Andréa Matsunaga and José Fortes, “Mapping Specifications for Ranked Hierarchical Trees in Data Integration Systems,” 15<sup>th</sup> IEEE International Conference on Information Reuse and Integration, San Francisco, California, August 13-15, 2014.
  178. Andréa Matsunaga, Austin Mast and José Fortes, “Reaching Consensus in Crowdsourced Transcription of Biocollections Information,” 10th IEEE International Conference on e-Science, Guarujá, Brazil, October 20-24, 2014.
  179. Youna Jung, Renato Figueiredo and José Fortes, “Location-based Timely Cooperation over Social Private Network,” 10th IEEE International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom 2014), Miami, Florida, October 22–25, 2014.
  180. Tae Seung Kang, Andréa Matsunaga and José Fortes, “Design and Implementation of Middleware for Cloud Disaster Recovery via Virtual Machine

- Migration Management,” 2014 IEEE/ACM International Conference on Utility and Cloud Computing (UCC 2014), London, UK, December 2-11, 2014.
181. Ye Xia, Shigang Chen, Mauricio Tsugawa and Jose Fortes, “Toward Hierarchical Mixed Integer Programming for Pack-to-Swad Placement in Datacenters,” 12<sup>th</sup> IEEE International Conference on Autonomic Computing, Grenoble, France, July 7 – 10, 2015.
  182. Kohei Ichikawa, Mauricio Tsugawa, Jason Haga, Hiroaki Yamanaka, Te-Lung Liu, Yoshiyuki Kido, Pongsakorn U-Chupala, Che Huang, Chawanat Nakasan, Jo-Yu Chang, Li-Chi Ku, Whey-Fone Tsai, Susumu Date, Shinji Shimojo, Philip Papadopoulos and Jose Fortes, “PRAGMA-ENT: Exposing SDN Concepts to Domain Scientists in the Pacific Rim,” PRAGMA Workshop on International Clouds for Data Science (PRAGMA-ICDS 2015), October 7, 2015.
  183. (Invited) Bo An, Xiaodong Zhang, Mauricio Tsugawa, Ying Zhang, Chun Cao, Gang Huang and Jose Fortes, “Towards a Model-defined Cloud-of-Clouds,” IEEE First International Conference On Collaboration and Internet Computing, Hangzhou, China, Oct. 28-30, 2015.
  184. Ye Xia, Shigang Chen, Mauricio Tsugawa and Jose Fortes, “Pack up Cloud: Recursive Datacenter Resource Management and Experimental Studies,” 5th International Symposium on Cloud and Service Computing (SC2 2015), Chengdu, China, Dec. 19-21, 2015.
  185. Chelsea A Metcalf, Farhaan Fowze, Tuba Yavuz and Jose Fortes, “Extracting Configuration Parameter Interactions Using Static Analysis”, 2016 IEEE 24<sup>th</sup> International Conference on Program Comprehension (ICPC ‘17), Austin, Texas, May 16 – 17, 2016.
  186. Yi Wang, Ye Xia, Shigang Chen, Mauricio Tsugawa, José A. B. Fortes, “Demonstrating Scalability and Efficiency of Pack-centric Resource Management for Cloud”, 2016 IEEE 9th International Conference on Cloud Computing (CLOUD), San Francisco, California, June 27 – July 2, 2016.
  187. Gil Jae Lee and Jose A. B. Fortes, “Hadoop Performance Self-Tuning Using a Fuzzy-Prediction Approach”, 2016 IEEE International Conference on Autonomic Computing (ICAC), pp. 55-64, Wurzburg, Germany, July 18 – 22, 2016.
  188. Icaro Alzuru, Andréa Matsunaga, Maurício Tsugawa and José A. B. Fortes, “Cooperative Human-Machine Data Extraction from Biological Collections”, 2016 12<sup>th</sup> IEEE International Conference on e-Science, October 24, 2016, Baltimore, Maryland.
  189. Mohamed Azab and José A. B. Fortes, “Towards proactive SDN-controller attack and failure resilience,” 2017 International Conference on Computing, Networking and Communications (ICNC), pp. 442-448, 26-29 January, 2017.
  190. G. J. Lee and J. A. B. Fortes, “Hierarchical Self-Tuning of Concurrency and Resource Units in Data-Analytics Frameworks”, in International Conference on Autonomic Computing (ICAC), Columbus, OH, USA, 2017, vol. IEEE, p. 49-58 (Best Student Paper Award, runner-up for Best Paper Award).

191. J. Kon, G. Lee, J. A. B. Fortes and S. Yamaguchi, "A Kernel-based Method of Resolving Performance Inefficiencies in Mining Frequent-patterns in Encrypted Data," *9<sup>th</sup> International Workshop on Advances in Networking and Computing (WANC'18)*, Hida Takayama, Japan, November 27-30, 2018.
192. M. Nakagami, J. Kon, G. Lee, J. A. B. Fortes and S. Yamaguchi, "File Placing Location Optimization on Hadoop SWIM," *9<sup>th</sup> International Workshop on Advances in Networking and Computing (WANC'18)*, Hida Takayama, Japan, November 27-30, 2018.
193. Makoto Nakagami; Jose A. B. Fortes; Saneyasu Yamaguchi, "Job-Aware Optimization of File Placement in Hadoop," *2019 IEEE 43rd Annual Computer Software and Applications Conference (COMPSAC)*, 15-19 Jul 2019.
194. Hardisty A, Ma K, Nelson G, Fortes J (2019) 'openDS' – A New Standard for Digital Specimens and Other Natural Science Digital Object Types. *Biodiversity Information Science and Standards* 3: e37033. 18 June 2019, <https://doi.org/10.3897/biss.3.37033>
195. I. Alzuru, R. Stephens, A. Matsunaga, M. Tsugawa, P. Flemons and J. A. B. Fortes, "Quality-aware Human-Machine Text Extraction for Biocollections using Ensembles of OCRs", *eScience 15th International Conference*, September 24 – 27, 2019.
196. Icaro Alzuru, Aditi Malladi, Andrea Matsunaga, Mauricio Tsugawa, and Jose A.B. Fortes, "Human-Machine Information Extraction Simulator for Biological Collections," *The 3rd IEEE Workshop on Human-in-the-loop Methods and Human Machine Collaboration in BigData (IEEE HMDData 2019) co-located with IEEE Bigdata 2019*, Los Angeles, Dec. 9<sup>th</sup>, 2019.
197. Makoto Nakagami, Jose A.B. Fortes and Saneyasu Yamaguchi, "Usable Disk Space Control Based on Hadoop Job Features," 10th International Workshop on Advances in Networking and Computing, in conjunction with The Seventh International Symposium on Computing and Networking (CANDAR'19), Nagasaki, Japan, November 26-29, 2019. Selected as Best Poster Paper.
198. Srivattsan Sridharan, Shravan Gaonkar and Jose A. B. Fortes, "Bandit-based Run-time Adaptation of Cache Replacement Policies in Content Management Systems," *The Eighth International Symposium on Computing and Networking (CANDAR'20)*, Japan, November 24-27, 2020
199. Makoto Nakagami, Jose A.B. Fortes, Saneyasu Yamaguchi, "Performance Improvement of Hadoop ext4-based Disk I/O", *The Eighth International Symposium on Computing and Networking (CANDAR'20)*, Japan, November 24-27, 2020.
200. Icaro Alzuru, Andréa Matsunaga, Maurício Tsugawa, and José A.B. Fortes, "General Self-aware Information Extraction from Labels of Biological Collections," *Fourth IEEE Workshop on Human-in-the-loop Methods and Future of Work in BigData (HMDData 2020)*, IEEE BigData 2020, December 10-13, 2020.



201. Riku Hirabayashi, Jose A. B. Fortes and Saneyasu Yamaguchi, “Aggressiveness Controllable Block-Level Cache,” The Ninth International Symposium on Computing and Networking (CANDAR’21), Japan, November 23-26, 2021.

### Other Publications:

1. A. Matsunaga, M. Tsugawa, and J. Fortes, “Getting on the Virtual Bus,” in *FedTech: Technology Insights for Leaders in Federal Government*, pg. 31-32, May 2008.
2. J. Xu, M. Zhao, J. Fortes, "Applying Network Science to Cooperative Autonomic Management in Dynamic Distributed Systems," presented at The US Military Academy Network Science Workshop, 15-17 October 2008, <http://www.netscience.usma.edu/NSW3/Program/Index.htm>
3. Maurício Tsugawa, Andréa Matsunaga, José A. B. Fortes, “Cloud Computing Security: What Changes with Software-Defined Networking?” *Secure Cloud Computing*, Jajodia, S., Kant, K., Samarati, P., Singhal, A., Swarup, V., Wang, C. (Eds.), Springer, 2014/1/1, pp. 77-9.
4. Maurício Tsugawa, Andréa Matsunaga, José A. B. Fortes, “Cloud Networking to Support Data Intensive Applications,” *Cloud Computing for Data Intensive Applications*, Judy Qiu and Xiaolin “Andy” Li, Springer, 2014, VIII, 427 p. 180 illus. ISBN 978-1-4939-1904-8.
5. Michael Elliott, Amerdeep Siglani, Mark Girson, Erik Bredfeldt, Lila Stewart, Matthew Collins, Renato Figueiredo, and José A. B. Fortes, “On the Feasibility of Data-centric Modeling of Gainesville Businesses (Final report),” University of Florida/City of Gainesville meeting, September 2018.
6. Nelson G, Karim T, Gillespie R, Fortes J, Jones DS (2019) “Reducing Dependence on Digital Biodiversity Data Silos Through Global Alignment and Collaboration.” *Biodiversity Information Science and Standards* 3: e37897. <https://doi.org/10.3897/biss.3.37897>. Presented at Biodiversity Next 2019.
7. Alex R Hardisty, Keping Ma, Gil Nelson, Jose Fortes, “‘openDS’ – A New Standard for Digital Specimens and Other Natural Science Digital Object Types,” *Biodiversity Information Science and Standards* 3: e37897. <https://doi.org/10.3897/biss.3.37033/>. Presented at Biodiversity Next 2019.
8. M Elliott, JH Poelen, JAB Fortes, “Reliable Dataset Identifiers Are Essential Building Blocks For Reproducible Research,” 4th Annual Digital Data in Biodiversity Research, 1-3 June 2020.
9. Elliott MJ, Poelen JH, Fortes JA (2022) Signed Citations: Making citations of digital scientific content persistent. *Biodiversity Information Science and Standards* 6: e90911. <https://doi.org/10.3897/biss.6.90911> . Presented at TDWG 2022.
10. M. Elliott, J. Fortes, “Using ChatGPT with Confidence for Biodiversity-Related Information Tasks,” *Biodiversity Information Science and Standards* 7: e112926.

<https://doi.org/10.3897/biss.7.112926> . September 19, 2023. Presented at TDWG 2023.

11. Ellwood ER, Addink W, Bates J, Bentley A, Buschbom J, Freire-Fierro A, Fortes J, et al. (2023), "Connecting the Dots: Aligning human capacity through networks toward a globally interoperable Digital Extended Specimen (DES) infrastructure," *Biodiversity Information Science and Standards* 7: e112390. <https://doi.org/10.3897/biss.7.112390> . September 19, 2023. Presented at TDWG 2023.

### **Invited Lectures and Presentations**

1. "On the Design and Mapping of Algorithms into Processor Arrays," Detroit, Michigan, Chicago, Illinois, Dallas, Texas, NCR, Parallel Computing Approaches for Image and Digital Signal Processing Seminar, October 2, 1985, October 4, 1985, October 9, 1985 (respectively).
2. "Processor Arrays," San Diego, California, NCR, April 16, 1987.
3. "Research on Fault Tolerant Processor Arrays at Purdue University," Universidad Politecnica de Catalunya, Barcelona, Spain, July 9, 1987.
4. "The Systematic Design of Systolic Arrays," University of North Carolina at Charlotte and Microelectronics Center of North Carolina Television Network, Charlotte, North Carolina, October 19, 1987.
5. "Neural Network Hardware Implementations," Waterloo, Canada, NCR, December 10, 1987.
6. "Systematic Methodologies for the Design of Systolic Arrays," L'Aquila, Italy, Advanced Summer Course on Architecture for VLSI Computers, July 3-9, 1988.
7. "Tutorial Introduction to Processor Arrays," Universidad Politecnica de Catalunya, Barcelona, Spain, July 11, 1988.
8. "Mapping Algorithms into Bit-level Processor Arrays," Princeton University, Princeton, New Jersey, April 25, 1989.
9. "Processor Arrays: Concept, Design, Applications and Real Machines," 3<sup>rd</sup> Symposium Internacional Computacion UDEM'90, Universidad de Monterrey, Monterrey, Mexico, September 28, 1990.
10. "Systolic Array Design in the Linear Algebra Framework," San Francisco, California, Second SIAM Conference on Linear Algebra, Linear Algebra in Systolic Arrays Mini-symposium, November 5-8, 1990.
11. "Mapping Algorithms onto Parallel Architectures: Time Schedules," Lisbon, Portugal, The Design and Application of Parallel Digital Processors, Second International IEE Specialist Seminar, April 15-19, 1991.
12. "Generalized Cycle Shrinking," Chateau de Bonas, Gers, France, Conference on Algorithms and Parallel VLSI Architectures II, June 1991.
13. Keynote talk, "Exploiting Parallelism with Linear Schedules," Beijing, China, International Conference for Young Computer Scientists, July 1991.

14. "Linear Schedules: Optimization and Relation to Parallelizing Compiler Techniques," University of Illinois, Urbana-Champaign, Illinois, Center for Supercomputing Research and Development, February 4, 1992.
15. Keynote talk, "On the Adaptability of Algorithms and Architectures," Lyon, France, 1992 Conference on Parallel Processing - Vector and Array Parallel Processors (CONPAR-VAPP 92), September 1-4, 1992.
16. Keynote talk, "Matching Algorithms and Architectures," Barcelona, Spain, EUROMICRO Symposium on Microprocessing and Microprogramming, September 6-9, 1993.
17. "Matching Algorithms and Architectures," Univ. of Malaga (November 26, 1993), Univ. Comp. of Madrid (December 15, 1993), Univ. of Santander (December 17, 1993), Univ. of Santiago (December 20, 1993), Spain.
18. "Commutative Parallel Processing and Data Distribution Independent Computing," Northwestern University, Chicago, Illinois, June 1, 1994.
19. Keynote talk, "Compute (k&m-'pyüt): to Calculate in Memory or on the Net," Pirenópolis, Brazil, International Brazilian Symposium on Computer Architecture (SBAC 2001), September 10, 2001.
20. Keynote talk, "Nanocomputing with Delays," International Conference on Application-Specific Systems, Architectures and Processors (ASAP'02), June 16-17, 2002. (Abstract Only).
21. Keynote talk, "In-VIGO: Making the Grid Virtually Yours," Wuhan, China, IFIP International Conference on Network and Parallel Computing, October 15-20, 2004.
22. "Using Virtualization and Service Technologies to Grid-Enable Applications," Tsinghua University, Beijing, China, March 16, 2005.
23. "Using Virtualization and Service Technologies to Grid-Enable Applications," Tunghai University, Taichung, Taiwan, Advance Program of the Eleventh Workshop on Compiler Techniques for High-Performance Computing (CTHPC'2005 Workshop), March 17-18, 2005.
24. Keynote talk, "Distributed and Parallel Computing," Universidade Nova de Lisboa, Lisboa, Portugal, Euro-Par 2005, August 30 – September 2, 2005.
25. "Nanodevices and Nanoarchitectures," Portland State University, Portland, Oregon, NSF - Architectures for Silicon Nanoelectronics and Beyond Workshop, September 13-14, 2005.
26. "Computing Grids: Virtually Yours and At Your Service," Colorado State University, Ft. Collins, Colorado, Computer Science Department Seminar Series - ISTeC Distinguished Lecture, March 31, 2006.
27. "Towards Autonomic Virtual Applications and Systems," Colorado State University, Ft. Collins, Colorado, ISTeC, Joint Electrical and Computer Engineering Department and Computer Science Department Seminar, March 31, 2006.

28. "Probabilistic Computation," Cincinnati, Ohio, 2006 IEEE Conference on Nanotechnology (IEEE-NANO 2006), July 16-20, 2006.
29. "Applying Network Science to Cooperative Autonomic Management in Dynamic Distributed Systems," Army Network Science Workshop (NSW), United States Military Academy (USMA), West Point, New York, October 22-24, 2007.
30. "Decoupling QoS and Resource Management in Virtualized Data Centers," Distinguished Lecture Series, Florida International University, Miami, Florida, December 10, 2007.
31. Keynote talk, "Decoupling Quality of Service, Resource Management and Connectivity in Clouds and Data Centers," The 8th International Symposium on Parallel and Distributed Computing (ISPDC '09), Lisbon, Portugal, July 1-3, 2009.
32. Keynote talk, "Sky Computing: When Multiple Clouds Become One", 10th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, Melbourne, Victoria, Australia, May 2010.
33. Keynote talk, "Autonomic computing across clouds", Grids Meet Autonomic Computing (GMAC) held in association with the 7th IEEE International Conference on Autonomic Computing and Communications, Washington D.C., June 2010.
34. Keynote talk, "Virtually networking the clouds", the 9th IFIP Annual Mediterranean Ad Hoc Networking Workshop, Juan Les Pins, France, June 2010.
35. "Cross Cloud Computing", International Advanced Research Workshop on High Performance Computing, GRIDS and Clouds, Cetraro, Italy, June 2010.
36. Keynote talk, "Towards the Ubiquitous Cloud: Multi-Cloud Systems", the 6th International Conference on Ubiquitous Information Technologies & Applications (CUTE 2011), Seoul, Korea, December 15 - 17, 2011.
37. "Computing Research Testbeds as a Service: Supporting large scale Experiments and Testing", Introduction to Birds of a Feather at SC12 International Conference for High Performance Computing, Networking, Storage and Analytics, Salt Lake City, Utah, November 10-16, 2012.
38. Invited Speaker, "Towards Software-defined Distributed Systems," 4th São Paulo High Performance Computing Regional School (ERAD-SP 2013), Sao Carlos, Brazil, July 29-31, 2013.
39. Invited Speaker, "Towards Software-defined Distributed Systems," Tsinghua University, Beijing, October 14, 2013.
40. Keynote talk, "Towards Software-defined Distributed Systems," 2013 International Conference on Cloud and Service Computing, Beijing, November 4-6, 2013.
41. Invited Speaker, "Towards Software-defined Distributed Systems," Southeast Asia International Joint Research and Training Program (SEAIP 2013), Tainan, Taiwan, December 3-6, 2013.

42. Invited Speaker, "The case for software-defined distributed systems," Asia Supercomputing Community (ASC-2014): Supercomputing Challenge and High-Performance Computing Workshop, Guangzhou, China, April 21-25, 2014.
43. Invited Speaker, "Sharing biodiversity data using trusted IT infrastructure: PRAGMA and iDigBio," PRAGMA special symposium at International Conference on Serpentine Ecology 2014, 9-13 June, 2014, Kota Kinabalu, Malaysia.
44. Invited Speaker, "Software-defined Datacenters and Environments," Southeast Asia International Joint-Research and Training Program (SEAIP 10), December 2 - 5, 2014, Hsinchu, Taiwan.
45. Invited Speaker, "Resilient IT for disaster recovery and response", 7th regional disaster prevention information Symposium, September 25, 2015, Kansai University, Osaka, Japan.
46. Keynote talk, "Software-defined IT systems", 2015 International Conference on Advanced Computer Science and Information Systems, October 10-11, 2015, Depok, Indonesia.
47. Keynote talk, "Software-defined cloud systems: concepts and challenges", 6th EAI International Conference on Cloud Computing, October 28-29, 2015 | Daejeon, South Korea.
48. Keynote talk, "Software-defined Cyberinfrastructure and Applications: Concepts, Research and Opportunities for International Collaboration", 15<sup>th</sup> International Conference on Computer Applications, February 16-17, 2017, Yangon, Myanmar.
49. Keynote talk, "Towards software-defined data analytics," Third International Conference on Data Science and Systems (DSS 2017), Bangkok, Thailand, December 10-20, 2017.
50. Invited presentation, "Data Handling and Processing and the CENTRA project," Atlantic Interactions, 3rd. High-level Industry-Science Government Dialogue, May 7-8, 2018, Praia, Cape Verde.
51. Invited "Master Lectures" presentation, "Information extraction, dataset referencing and linked-data research at ACIS/U. Florida," Fu-Jen Catholic University, Taiwan, 3/31, 2023.
52. Invited "Master Lectures" presentation, "Cloud computing and data center management," National Sun Yat-sen University, Kaohsiung City, Taiwan, 4/7, 2023.
53. Invited talk: "Using AI for Information Extraction with Confidence", Data Integration and Analysis System Program, University of Tokyo, February 5<sup>th</sup>, 2024.

**Editorial Positions:**

- 2013–2022 Member of Editorial Board: IEEE Transactions on Services Computing.
- 2008–Present Member of the Editorial Board: Book series on *Autonomic Systems*, Birkhauser Publishing.
- 1993–2022 Member of Editorial Board: *International Journal of Parallel Programming*.
- 2013–2016 Member of Editorial Board: IEEE Transactions on Cloud Computing.
- 1990–2014 Member of Editorial Board: *Journal of VLSI Signal Processing*.
- 2005 Guest Co-Editor (with R. Figueiredo and P. Dinda): of *IEEE Computer* special issue on “Resource Virtualization Renaissance,” May 2005.
- 2004–2010 Member of the Editorial Board: *ACM Journal on Emerging Technologies in Computer Systems*.
- 2002–2006 Member of Editorial Board: *IEEE Transactions on Parallel and Distributed Systems*.
- 1998–2007 Member of Editorial Board: Cluster Computing: The Journal of Networks, Software Tools and Applications.
- 1993–1996 Member of Editorial Board: *IEEE Transactions on Parallel and Distributed Systems*.
- 1989–1992 Subject Area Editor: *Journal of Parallel and Distributed Computing*.
- 1989 Guest Co-Editor (with S. Y. Kung): *Journal of VLSI Signal Processing on Systolic Systems* special issues.
- 1987 Guest Co-Editor (with B. Wah): *IEEE Computer* special issue on “Systolic Arrays: From Concept to Implementation,” July 1987.

**Advisory Board and Steering Committee Positions:**

1. Member of the International Scientific Board of INESC P&D, Brasil. 2022 – present.

2. Member of the NSF Advisory Committee for International Science and Engineering, 2014-2020.
3. Member of the Advisory Committee of the NSF Directorate for Computer and Information Science and Engineering (CISE), 2010-2014; Also Member of the following subcommittees.
  - Midscale Infrastructure
  - CISE AC “Breakthrough Proposals” Working Group
  - Vision 2025
4. Member of the Advisory Board of Scientific Advisory Board, INESC TEC, Porto, Portugal, 2006-present. Chair of the Board, 2019 - present.
5. Member of Steering Committee: International Conference on Application-Specific Systems, Architectures and Processors (ASAP), 1995-present.
6. Member of the Leadership Council: NSF Network for Computational Nanotechnology, 2002-2006
7. Member of the Advisory Board of the Department: Electrical Engineering of the University of Porto, Portugal, 2004 - 2010
8. Member of the Advisory Board: I2lab, University of Central Florida College of Engineering, 2005 - 2008.
9. Member of Steering Committee: International Conference on High Performance Computing for Computational Science (VECPAR), 1996 – 2014.
10. Member of Steering Committee: Workshop on Virtualization Technologies in Distributed Computing VTDC, 2006-2014.
11. Member of the Advisory Board of LASIGE, Lisbon, Portugal, 2013-2015.

### **Membership in Professional Societies**

1. International Electrical and Electronics Engineers (IEEE) (1979 – present)
2. Association for Computing Machinery (ACM) (1997 – present)
3. American Society for Engineering Education (ASEE) (1999 – present)
4. American Association for the Advancement of Science (AAAS) (2002 – present)
5. American Association for Artificial Intelligence (AAAI) (2007 – 2009, 2011 - present)
6. Digital Government Society of North America (DGSNA) (2007 – 2009, 2011 - 2013)

### **Professional Activities:**

1. Co-Organizer (With D. Gannon), Purdue Workshop in Program Transformations and Optimizing Compilers for Supercomputers, September 5-6, 1984.
2. Session Chairman, International Conference on Parallel Processing (Session Title Algorithms), Bellaire, Michigan, 1984.
3. Session Chairman, International Conference on Parallel Processing (Session Title - Memory Management), St. Charles, Illinois, 1986.
4. Session Chairman/Organizer, 20th Hawaii International Conference in System Sciences (Session Title - Systolic/Pipelined Parallel Architectures), Kona, Hawaii, 1987.
5. Session Chairman/Co-Organizer (with B. Wah), IEEE Computer Society VLSI Workshop (Session Title - Intelligent Design of VLSI Systems), Clearwater Beach, Florida, 1987.
6. Session Chairman, International Conference on Parallel Processing (Session title - Fault-Tolerant Computing), St. Charles, Illinois, 1987.
7. Member, 1988 IEEE Computer Society VLSI Workshop Program Committee, Clearwater Beach, Florida, 1988.
8. Program Committee Member, International Conference on Systolic Arrays, Sponsors: IEEE and SPIE, San Diego, California, 1988.
9. Symposium Committee Member, 15th Annual International Symposium on Computer Architecture, Sponsors: IEEE and ACM, Honolulu, Hawaii, 1988.
10. Track Co-Chairman (with B. Appelbee), 21st Hawaii International Conference in System Sciences (Track Title - Computer Architecture) Kona, Hawaii, 1988.
11. Session Chairman, International Conference on Parallel Processing (Session Title - Shared Memory Software), St. Charles, Illinois, 1988.
12. Session Chairman/Co-Organizer (with B. Wah), IEEE Computer Society VLSI Workshop (Session Title - Novel Architectures), Clearwater Beach, Florida, 1988.
13. Program Committee Member, International Conference on Systolic Arrays, Belfast, Ireland, 1989.
14. Program Committee Co-Chair, International Conference on Application-Specific Array Processors, Princeton, New Jersey, 1990.
15. Session Chairman, International Conference on Parallel Processing (Session Title - Interconnection Networks), Chicago, Illinois, 1990.
16. Program Committee Co-Chair, International Conference on Application-Specific Array Processors, Barcelona, Spain, 1991.
17. Program Committee Member, 5th International Parallel Processing Symposium, Los Angeles, California, 1991.
18. Program Committee Member, 18th Annual International Symposium on Computer Architecture, Toronto, Canada, 1991.



19. Organizing Committee Corresponding Member, IEE Second International Specialist Seminar on The Design and Application of Parallel Digital Processors, Lisbon, Portugal, 1991.
20. General Chair, International Conference Application-Specific Array Processors, Berkeley, California, 1992.
21. Program Committee Member, International Conference and Exhibition on Parallel Computing and Transputer Applications (PACTA'92), Barcelona, Spain, 1992.
22. Program Committee Member, 5th ISMM International Conference on Parallel and Distributed Computing and Systems, Pittsburgh, Pennsylvania, 1992.
23. Program Committee Member, 22nd Annual International Symposium on Fault-Tolerant Computing, Boston, Massachusetts, 1992.
24. Program Committee Member, International Conference on Application-Specific Array Processors, Venice, Italy, 1993.
25. Program Committee Member, International Conference on Parallel and Distributed Systems, Taipei, Taiwan, China, 1993.
26. Program Committee Member, International Conference on Application-Specific Array Processors, San Francisco, California, 1994.
27. Co-Organizer, Hawaii International Conference on System Sciences (HICSS-27) Mini-track on "Design and Prototyping of Digital Signal Processing Systems," Hawaii, 1994.
28. Program Committee Member, International Symposium on Computer Architecture, Chicago, Illinois, 1994.
29. Finance Chair, International Symposium on Computer Architecture, Chicago, Illinois, 1994.
30. Program Committee Member, 3rd EUROMICRO Workshop on Parallel and Distributed Processing, Sanremo, Italy, January 25-27, 1995.
31. Program Committee Member, International Conference on Parallel Processing, Oconomowoc, Wisconsin, 1995.
32. Program Committee Member, International Conference on Application-Specific Array Processors, Strasbourg, France, 1995.
33. Program Committee Member, 15th International Conference of the Chilean Computer Science Society, Arica, Chile, 1995.
34. Program Committee Member, 4th Euro-micro Workshop on Parallel and Distributed Processing, Braga, Portugal, 1995.
35. General Co-Chair, International Conference on Application-Specific Systems, Architectures and Processors (ASAP'96), Chicago, Illinois, 1996.
36. Program Committee Member, International Symposium on Parallel and Distributed Processing (SPDP'96), Dallas, Texas, 1996.

37. Program Committee Member, 3rd IEEE High Performance Computer Architecture Symposium (HPCA-3), San Antonio, Texas, February 3-5, 1997.
38. Steering Committee Member, IEEE Computer Society 1996 Annual Workshop on VLSI, Clearwater Beach, Florida, 1996.
39. Chair, Frontiers'96 Workshop on Domain Specific Systems, Annapolis, Maryland, 1996.
40. Co-Program Chair, Architecture, Networking and Communications of 1997 International Conference on Parallel Processing (ICPP'97), Bloomington, Illinois, 1997.
41. General Co-Chair, International Conference on Application-Specific Systems, Architectures and Processors (ASAP'97), Zurich, Switzerland, 1997.
42. Co-Organizer (with Ron Cole of Oregon Graduate Institute), Workshop on International Collaboration in Computer Science, October 9-11, 1997, Stevenson, Washington, 1997.
43. Program Committee Member, International Conference on Parallel and Distributed Systems (ICPADS'97), Seoul, Korea, December 10-13, 1997.
44. Vice Chair, IEEE VLSI Technical Committee, 1997.
45. Program Committee Member, Supercomputing 98 (SC98), Orlando, Florida, 1998.
46. Publicity and Publications Chair, International Symposium on Computer Architecture (ISCA98), Barcelona, Spain, 1998.
47. Vice-Chair, IEEE VLSI Technical Committee, 1998.
48. Steering Committee Member, IEEE Computer Society 1998 Annual Workshop on VLSI, Orlando, Florida, April 16-17, 1998.
49. Co-organizer, Petaflops Workshop - Frontiers'99, Annapolis, Maryland, February 22, 1999.
50. Program Committee Member, 4<sup>th</sup> International Meeting on Vector and Parallel Processing (VECPAR 2000) , Porto, Portugal, June 21-23, 2000.
51. Program Committee Member, Workshop on Intelligent Memory, Cambridge, Massachusetts, November 12, 2000.
52. Program Committee Member, 12<sup>th</sup> International Conference on Application-specific Systems And Processors (ASAP 2000), Boston, Massachusetts, July 10-12, 2000.
53. Program Committee Member, 15<sup>th</sup> International Parallel and Distributed Processing Symposium (IPDPS), San Francisco, April 2001.
54. Program Committee Member, 10<sup>th</sup> Workshop on Heterogeneous Computing (HCW'01), San Francisco, April 2001.

55. Program Vice-Chair, 30<sup>th</sup> Annual International Conference on Parallel Processing (ICPP'01) - Network-based Computing, Valencia, Spain, September 2001.
56. Program Committee Member, 13<sup>th</sup> International Conference on Application-specific Systems, Architectures and Processors, San Jose, California, July 17-19, 2002.
57. Program Committee Member, 5<sup>th</sup> International VECPAR - High Performance Computing for Computational Science, Porto, Portugal, June 2002.
58. Program Committee Member, 12<sup>th</sup> Workshop on Heterogeneous Computing (HCW'03), France, April 2003.
59. Program Committee Member, 12th Brazilian Symposium on Computer Architecture, South Victoria, Brazil, September 2003
60. Program Committee Member, HPDC 2004 13<sup>th</sup> IEEE International Symposium - High-Performance Distributed Computing, Honolulu, Hawaii, June 2004.
61. Program Committee Member, dg.o 2004 Conference, Seattle, Washington May 2004.
62. Program Committee Member, 4th IEEE International Conference on Nanotechnology, Munich, Germany August 2004.
63. Program Committee Member, IEEE International Symposium on Network Computing and Applications, Cambridge, MA, August 2004.
64. Program Committee Member, Cluster 2004 Conference, San Diego, CA , September 2004.
65. Program Committee Member, IEEE Application-specific Systems, Architectures and Processors 2004 Conference, Galveston, Texas, September 27-29, 2004.
66. Program Committee Member, Advance Program of the 11th Workshop on Compiler Techniques for High-Performance Computing (CTHPC'2005), Tunghai University, Taichung, Taiwan, March 17-18, 2005.
67. Invited Panelist, 14th Workshop on Heterogeneous Computing (HCW 2005) - Panel on "Research Challenges Arising from Heterogeneity," Denver, Colorado, April 4, 2005.
68. Program Committee Member, 2005 High-Performance Distributed Computing (HPDC 2005), Atlanta, Georgia, April 1, 2005.
69. Program Committee Member, dg.o 2005 Conference, Atlanta, Georgia, May 2005.
70. Member of Program Committee on the First IEEE International Workshop on Design and Test of Defect-Tolerant Nanoscale Architectures (NanoArch 05), Palm Spring, California, May 1-5, 2005.
71. Program Committee Member, IEEE Conference on Application-Specific Systems, Architectures and Processors (ASAP 2005), Samos, Greece, July 23-25, 2005.

72. Program Committee Member, 4th IEEE International Symposium on Network Computing and Applications (IEEE NCA05), Cambridge, MA, July 27-29, 2005.
73. Program Committee Member, 17th International Symposium on Computer Architecture and High-Performance Computing (SBAC-PAD), Rio De Janeiro, Brazil, October 24-27, 2005.
74. Program Committee Member, First International Conference on High Performance Embedded Architectures and Compilers (HiPEAC 2005), Barcelona, Spain, November 17-18, 2005.
75. Program Chair, 15th Heterogeneous Computing Workshop (HCW 2006), Rhodes Island, Greece, April 25, 2006.
76. General Co-Chair, 7th Annual International Conference on Digital Government Research, San Diego, California, May 21-24, 2006.
77. General Co-Chair, 5th International Conference on Grid and Cooperative Computing (GCC 2006), 2006.
78. General Chair, Supercomputing'06 - 1st Workshop on Virtualization Technologies in Distributed Computing, Tampa, Florida, Nov. 17, 2006.
79. Program Committee Member, 3rd International Conference on Autonomic Computing (ICAC06), Dublin, Ireland, June 13-16, 2006.
80. Program Committee Member, 2nd IEEE International Workshop on Design and Test of Defect-Tolerant Nanoscale Architectures (NanoArch 06), Boston, MA, June 17-21, 2006.
81. Member, IEEE NANO2006 Program Committee, Cincinnati, Ohio, July 2006.
82. Program Committee Member, EGOV 2006, Krakow, Poland, September 4-8, 2006.
83. Technical Program Committee Member, 18th International Symposium on Computer Architecture and High-Performance Computing (SBAC-PAD), Ouro Preto, Brazil, October 18-20, 2006.
84. Program Committee Member, IFIP International Conference on Network and Parallel Computing (NPC 2006), Tokyo, Japan, October 2 - October 4, 2006.
85. General Chair, 16th Heterogeneous Computing Workshop (HCW 2007), Long Beach, CA, March 2007.
86. Technical Program Committee Member, 8th Annual International Conference on Digital Government Research, Philadelphia, May 20-23, 2007.
87. Program Chair, 4<sup>th</sup> International Conference on Autonomic Computing (ICAC07), Jacksonville, FL, June 11-15, 2007.
88. Program Committee Member, IEEE NANO 2007, Hong-Kong, July 2007.
89. IEEE 17<sup>th</sup> International Conference on Application-specific Systems, Architectures and Processors, Montréal, Québec, Canada, July 9-11, 2007.

90. Technical Program Committee Member, 2007 International Conference on Complex Open Distributed Systems (CODS'2007), Chengdu, China, 22-24 July 2007.
91. Technical Program Committee Member, 6th International Conference on Grid and Cooperative Computing (GCC2007), Urumchi, Xinjiang, China, August 16-18, 2007.
92. Technical Program Committee Member, 19<sup>th</sup> International Symposium on Computer Architecture and High-Performance Computing (SBAC-PAD), Serra Azul Hotel Gramado, RS, Brazil, October 24-27 2007.
93. General Chair, 2<sup>nd</sup> Workshop on Virtualization Technologies in Distributed Computing (VTDC 2007) held in conjunction with Supercomputing 2007 (SC '07), Reno, Nevada, November 12, 2007.
94. Invited Panelist, 9<sup>th</sup> Annual International Digital Government Society Research Conference, Montréal, Canada, May 18- 21, 2008.
95. General Chair, ICAC 2008 Conference, Chicago, Illinois, June 2 – 6, 2008.
96. Organizing Committee Member, NSF Annual Industry/University Cooperative Center Program Meeting, Washington, D.C., June 10-11, 2008.
97. Program Committee Member, the ACM International Symposium on High Performance Distributed Computing (HPDC 2010), Chicago, Illinois, June 20-25, 2010.
98. Program Committee Member, the 22<sup>nd</sup> International Symposium on Computer Architecture and High-Performance Computing (SBAC-PAD), Petropolis, Brazil, October 27-30, 2010.
99. Program Committee Member, the 16<sup>th</sup> ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD-2010), Washington D.C., July 25-28, 2010.
100. Program Committee Member, the 11<sup>th</sup> Annual International Conference on Digital Government Research (dg.o 2010), Pueblo, Mexico, May 17-20, 2010.
101. Program Committee Member, Emerging Computational Methods for the Life Sciences Workshop (ECMLS2010) in conjunction with the ACM International Symposium on High Performance Distributed Computing (HPDC 2010), Chicago, IL, June 20-25, 2010.
102. Invited Guest Speaker, the 10<sup>th</sup> IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2010), Melbourne, Australia, May 17 – 20, 2010.
103. Program Committee, the 12<sup>th</sup> International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2010), New York, NY, September 20-22, 2010.
104. Program Committee Member, the 13<sup>th</sup> International Conference on Hybrid Systems: Computation and Control, Stockholm, Sweden, April 12-16. 2010.
105. Program Committee Member, TeraGrid'10, Pittsburgh, PA, August 2-5, 2010.

106. Program Committee Member, 7th International Workshop on Web Services and Formal Methods (WS-FM'10), September 16-17, 2010.
107. Program Committee Member, the 4th IEEE International Conference on Self-Adaptive and Self-Organizing Systems (SASO 2010), Budapest, Hungary, Sept. 27-Oct. 1, 2010.
108. Program Committee Member, the 6<sup>th</sup> International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom 2010), Chicago, IL, October 9 – 12, 2010.
109. Program Committee Member, 2<sup>nd</sup> IEEE International Conference on Cloud Computing Technology and Science (CloudCom 2010), Indianapolis, IN, November 30 – December 3, 2010.
110. Technical Program Committee Member, the 12th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2011), Newport Beach, CA, May 23–26, 2011.
111. Program Committee Member, the Second International Workshop on MapReduce and its Applications (MAPREDUCE'11), San Jose, CA, June 8, 2011.
112. Program Committee Member, the 12th Annual International Conference on Digital Government Research (dg.o 2011), College Park, MD, June 12-15, 2011.
113. Program Committee Member, the 3rd Cloud Computing International Conference: “Cloud Computing & You” (Cloudviews 2011), Porto, Portugal, November 4, 2011.
114. Program Committee Member, the 7th International Conference on Grid and Pervasive Computing (GPC-2012), Hong Kong, China, May 11 -13, 2012
115. Program Committee Member, the 12th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2012), Ottawa, Canada, May 13 – 16, 2012.
116. Program Committee Member, the 3<sup>rd</sup> International Workshop on MapReduce and its Applications (MapReduce 2012), Delft, Netherlands, June 18 – 19, 2012.
117. Program Committee Member, the 6<sup>th</sup> International Workshop on Virtualization Technologies in Distributed Computing (VTDC'12), Delft, Netherlands, June 18 – 19, 2012.
118. Program Committee Member, the 5th International Conference on Cloud Computing (CLOUD 2012), Honolulu, Hawaii, June 24-29, 2012
119. Program Committee Member, the 8th IEEE International Conference on eScience (eScience 2012), Chicago, IL, October 8 -12, 2012.
120. Program Committee Member, the 5<sup>th</sup> IEEE/ACM International Conference on Utility and Cloud Computing (UCC2012), Chicago, IL, November 5-8, 2012.
121. Program Committee Member, the 14<sup>th</sup> ACM/IFIP/USENIX International Middleware Conference (Middleware 2013), Beijing, China, May 24-31, 2013.

122. Program Committee Member, the 24<sup>th</sup> IEEE International Conference on Application-specific Systems, Architectures and Processors (ASAP13), Washington D.C., June 5-7, 2013.
  123. Program Committee Member, the 6<sup>th</sup> International Conference on Cloud Computing (CLOUD 2013), Santa Clara, CA, June 27 – July 2, 2013
  124. Program Committee Member, the International Conference on Utility and Cloud Computing (UCC-2013), Dresden, Germany, December 2 -5, 2013.
  125. Program Committee Member, the 6<sup>th</sup> IEEE/ACM International Conference on Utility and Cloud Computing (UCC 2013), Dresden, Germany, December 9-12, 2013.
  126. Program Committee Member, the 14<sup>th</sup> ACM/IFIP/USENIX International Middleware Conference (Middleware 2013), Beijing, China, December 9 – 13, 2013.
  127. Program Committee Member, the 14<sup>th</sup> IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2014), Chicago, IL, May 26-29, 2014.
  128. Program Committee Member, the 15<sup>th</sup> IEEE International Conference on Information Reuse and Integration (IEEE IRI 2014), San Francisco, CA, August 13 – 15, 2014.
  129. Program Committee Member, the 10<sup>th</sup> IEEE International Conference on e-Science (e-Science 2014), Guarujá, Brazil, October 2- 24, 2014.
  130. Program Committee Member, the 15<sup>th</sup> ACM/IFIP/USENIX International Middleware Conference (Middleware 2014), Bordeaux, France, December 8-12, 2014.
  131. Program Committee Member, the 35<sup>th</sup> IEEE International Conference on Distributed Computing Systems (ICDCS), Columbus, Ohio, June 29<sup>th</sup> – July 2<sup>nd</sup>, 2015.
  132. Program Committee Member, the 12<sup>th</sup> International Conference on Autonomic Computing (ICAC 2015), Grenoble, France, July 7 – 10, 2015.
- >>>>Stopped tracking until 2024<<<<
133. Program Committee Member, 20th IEEE International Conference on e-Science (eScience 2024), Osaka, Japan, September 16-20th, 2024.

**Other Activities** (incomplete date and/or event-name to preserve anonymity):

1. Member, NSF Initiation Grants' Review Panel (MIPS Division), 198\*.
2. Member, NSF SBIR (Small Business Innovative Research), 198\*.
3. Proposal Review Panel Member, MIPS Division, 198\*.
4. Member, NSF Initiation Grants' Review Panel (MIPS Division), 198\*.

5. NSF Program Director, Microelectronics Systems Architecture, August 1989 – August 1990.
6. Member, NSF Initiation Grants' Review Panel (MIPS Division), 199\*.
7. Member, NSF Panel for Evaluation of Proposals for Undergraduate Faculty Enhancement, 199\*.
8. Ph.D. Thesis Reader, E.T.L. Omtzigt's Doctoral Dissertation, Yale University, 1993.
9. Member, NSF Initiation Grant's Review Panel (CCR Division), 199\*.
10. Member, Jury of Dr. Catherine Mongenet's "Habilitation" (an exam required for French faculty to become university professors), Universite de Franche-Comte, France, 1994.
11. Member, NSF Educational Infrastructure Proposal Review Panel (CISE/CDA Division), 199\*.
12. Committee of Visitors Member, for review of NSF CISE Infrastructure Programs, 1995.
13. Member, Ph.D. Committee, Ms. Michele Dion, Ecole Polytechnique de Lyon, France, 1996.
14. Member, Ph.D. Committee, Mr. José Miguel Alonso, Universidad de San Sebastian, Spain, 1996.
15. Review Panel Member, PRAXIS, Portugal, 199\*.
16. Member, NSF Career Grants' Review Panel, 199\*.
17. Member, NSF Review Panel for New Technologies Program, 199\*.
18. Member, NSF Review Panel for New Technologies Program, 199\*.
19. Member, NSF site visit team for Science and Technology Center, 199\*.
20. Committee of Visitors Member, NSF Division of International Activities, 1999.
21. Ph.D. Committee Member, Ms. Maria Gloria Martinez Vidal, Universidade Politécnica de Valencia, Spain, 1996.
22. Member, NSF review panel (CISE CCR), 200\*.
23. Review Panel Coordinator and Member, Portuguese Science Foundation, Portugal, 1999, 2000 and 2001.
24. Member, NSF review panel (CISE EIA), 200\*.
25. Member, NSF review panel (CISE CCR), 200\*.
26. Member, NSF review panel (CISE EIA-1), 200\*.
27. Member, NSF review panel (Math and Physics), 200\*.
28. Member, NSF review panel (CISE EIA-2), 200\*.



29. NSF Review Panel Member, Nanoscale Exploratory Research (NER) (NSE 04-043), Arlington, VA, March 10-11, 200\*.
30. Member, Transaction on Parallel and Distributed Computing (TPDS) - Editor-in-Chief Search Committee, 2005.
31. Panel Member, 14<sup>th</sup> Workshop on Heterogeneous Computing (HCW 2005) - "Research Challenges Arising from Heterogeneity," Denver, Colorado, April 4, 2005.
32. Computer Engineering Division Chair, Department of Electrical and Computer Engineering at the University of Florida, 2006
33. High Performance Computing Committee Member, Department of Electrical and Computer Engineering at the University of Florida, 2006 - present
34. Chair/Moderator, 7th Annual International Conference on Digital Government (dg.o 2006) - Session 3A (Crisis Management 1), May 22, 2006.
35. Sponsorship Committee Chair, Digital Government Society of North America, 2006 -2007.
36. Member, IEEE Fellows Evaluation Committee, 2010.
37. NSF Review Panel Member, Engineering Research Center (ERC), December 1, 2010.
38. NSF Review Panel Member, Science of Cloud Computing, February 25, 2011.
39. NSF Review Panel Member, April 21, 2011.
40. NSF Review Panel Member, reverse site visit, January 9, 2012.
41. NSF Review Panel Member, January 23, 2013.
42. NSF Review Panel Member, March 19, 2014.
43. NSF Review Panel Member, June 2, 2014.
44. NSF Review Panel Member, August 26, 2014.
45. NSF Review Panel Member, May 19, 2015.
46. Member, Clemson NSF SW Study Advisory Group.  
>>>>>>>stopped tracking until 2024<<<<<<<<<<<<<<<<<<
47. NSF Review Panel Member, January 30-31, 2024.