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RESEARCH INTERESTS:

Real-Time & Embedded Systems; Cyber-Physical Systems; Parallel and Cloud Systems; Fault-Tolerance and Dependable Computing; Power-Aware Computing; Resource Management and Scheduling Algorithms;

EDUCATIONAL BACKGROUND

- **Ph.D. in Computer Science, Dec. 2004,** University of Pittsburgh
Computer Science Department Pittsburgh PA, USA
Dissertation: *Energy and Reliability Management in Parallel Real-Time Systems*
Advisors: Prof. Rami Melhem and Prof. Daniel Mossé
- **M.E. in Computer Science and Technology, Jun. 1999,** Tsinghua University
Department of Computer Science and Technology Beijing, P.R.China
- **B.E. in Computer Science and Technology, Jun. 1996,** Xi'an Jiaotong University
Department of Computer Science and Engineering Xi'an Shanxi, P.R.China

PROFESSIONAL EMPLOYMENT HISTORY

- **Professor, Sept. 2016– present**
Department of Computer Science, University of Texas at San Antonio
- **Associate Professor, Sept. 2011– Aug. 2016**
Department of Computer Science, University of Texas at San Antonio
- **Visiting Scholar, Jan. 2013– May 2013**
Department of Computer Science, University of Pittsburgh
- **Assistant Professor, Jan. 2005– Aug. 2011**
Department of Computer Science, University of Texas at San Antonio

AWARDS AND HONORS

- **NSF CAREER Award** 2010 - 2015
“An Integrated Scheduling Framework for Multicore-Based Real-Time Embedded Systems”
- **Research Achievement Award** 2012
College of Science, University of Texas at San Antonio
- **Service Award as the Webmaster** 2009
IEEE Computer Society Technical Committee on Real-Time Systems (TCRTS)
- **Andrew Mellon Fellowship** 2003 - 2004
Faculty of Arts and Sciences, University of Pittsburgh
- **Compunetix Graduate Student Research Award** 2001 - 2002
Department of Computer Science, University of Pittsburgh

RESEARCH GRANTS

- **Co-PI: Intel/NSF:** *Cyberwell: a closed loop system using pipeline of deep learning models and EEG based Brain Computer Interfaces in HMDs to enable personalized, real-time cybersickness reduction*, \$200K, 9/1/2018 – 8/31/2019 (PI: Dr. John Quarles; Co-PIs: Dr. Yufei Huang, Dr. Pual Rad and Dr. Dakai Zhu);
- **PI: NSF, CNS-1422709:** *CSR: Small: Collaborative Research: Dependable Real-Time Computing on Heterogeneous Chip Multiprocessor Systems*, \$230,000, 8/15/2014 – 7/31/2017 (Dr. Hakan Aydin is the PI at GMU);
- **PI: NSF, CNS-0953005: CAREER:** *An Integrated Scheduling Framework for Multicore-Based Real-Time Embedded Systems*, \$400,000; 7/1/2010 – 6/30/2015, no cost extension to 6/30/2016
- **PI: NSF, CNS-1016974:** *CSR: Small: Collaborative Research: Generalized Reliability-Aware Power Management for Real-Time Embedded Systems*, \$185,379; 8/1/2010 – 7/31/2013, no cost extension to 6/30/2016 (Dr. Hakan Aydin is the PI at GMU);
- **Co-PI: NSF, CNS-0855247:** *II-NEW: Enhanced Parallelization for High Performance Computing*, \$227,178; 8/1/2009 – 7/31/2012 (PI: Kleanthis Psarris; Co-PIs: Ali Tosun and Qing Yi)
- **PI: NSF, CNS-0720651:** *Collaborative Research: CSR-EHS: Towards an Integrated Framework for Low Power Reliable Real-Time Embedded Systems*, \$179,983, 8/1/2007 – 7/31/2010, (Dr. Hakan Aydin is the PI at GMU), no cost extension to 7/31/2011
- **PI: UTSA, Faculty Research Award:** *Exploiting Chip-Multiprocessors (CMPs) in Real-Time Embedded Systems*, \$5,000; 9/1/2007 – 8/31/2008

BEST PAPER AWARDS

- Title: **“Preference-Oriented Fixed-Priority Scheduling for Real-Time Systems”**
The 12th IEEE Int’l Conference on Embedded Computing (EmbeddedCom; co-located with DASC), 2014, (Acceptance rate: 29%)
- Title: **“Efficient Power Management Schemes for Dual-Processor Fault-Tolerant Systems”**
The First Workshop on Highly-Reliable Power-Efficient Embedded Design (HARSH), with HPCA, 2013
- Title: **“Power Management for Real-Time Embedded Systems on Block-Partitioned Multi-core Platforms”**
The Int’l Conference on Embedded Software and Systems (ICCESS), 2008, (Acceptance rate: 21%)

PUBLICATIONS (Note: * indicates students under my supervision;)

Total Citations: 3100+; h-index: 29 (Google Scholar, Mar. 01, 2019)

- *Book Chapters and Thesis*
- B3. **Dakai Zhu**, Hakan Aydin, “Reliability-Aware Power Management for Real-Time Embedded Systems”, in the *Handbook of Energy-Aware and Green Computing*, Edited by Ishfaq Ahmad and Sanjay Ranka, Chapman & Hall/CRC, 2012 [ISBN: 9781466501164]
- B2. **Dakai Zhu**, Bruce R. Childers, Daniel Mossé and Rami Melhem, “Chap. 40: Power Aware Mapping of Real-Time Tasks to Multiprocessors”, in the *Handbook of Parallel Computing: Models, Algorithms, and Applications*, Edited by Sanguthevar Rajasekaran and John Reif, CRC Press, Dec. 2007 [ISBN: 1584886234]
- B1. **Dakai Zhu**, “Energy and Reliability Management in Parallel Real-Time Systems”, Ph.D. dissertation, Department of Computer Science, University of Pittsburgh, Dec. 2004

- *Refereed Journal Papers*

- J29. Rehana Begam*, Wei Wang and **Dakai Zhu**, “TIMER-Cloud: Time-Sensitive VM Provisioning in Resource-Constrained Clouds”, *IEEE Transactions on Cloud Computing (TCC)*, accepted Nov. 2017; [DOI: 10.1109/TCC.2017.2777992]
- J28. Jian-Jun Han, Xin Tao, **Dakai Zhu**, Hakan Aydin, Zili Shao and Laurence T. Yang, “Multicore Mixed-Criticality Systems: Partitioned Scheduling and Utilization Bound”, *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, vol. 37, no. 1, pp. 21-34, Jan. 2018 [DOI:10.1109/TCAD.2017.2697955]
- J27. Jian-Jun Han, Xin Tao, **Dakai Zhu** and Laurence T. Yang, “Resource Sharing in Multicore Mixed-Criticality Systems: Utilization Bound and Blocking Overhead”, *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, Vol. 28, no. 12, pp. 3626-3641, Dec. 2017 [DOI: 10.1109/TPDS.2017.2677442]
- J26. Yifeng Guo*, **Dakai Zhu**, Hakan Aydin, Jian-Jun Han and Laurence T. Yang, “Exploiting Primary/Backup Mechanism for Energy Efficiency in Dependable Real-Time Systems”, *Journal of Systems Architecture (JSA)*, Vol. 78, pp. 68-80, Aug. 2017 [10.1016/j.sysarc.2017.06.008]
- J25. Linwei Niu and **Dakai Zhu**, “Reliability-Aware Scheduling for Reducing System-Wide Energy Consumption for Weakly Hard Real-Time Systems”, *Journal of Systems Architecture (JSA)*, Vol. 78, pp. 30-54, Aug. 2017 [10.1016/j.sysarc.2017.06.004]
- J24. Jing Zeng, Laurence T. Yang, Man Lin, Zili Shao, and **Dakai Zhu**, “The System-level Design Optimization for Security-Critical Cyber-Physical-Social Systems”, *ACM Transactions on Embedded Computing Systems (TECS)*, Vol. 16, no. 2 (Article No. 39), April 2017, [DOI: 10.1145/2925991]
- J23. Mohammad A. Haque, Hakan Aydin and **Dakai Zhu**, “Joint Reliability and Energy Management of Real-Time Applications through Task Replication on Multicore Systems”, *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, Vol. 28, no. 3, pp 813-825, March 2017, [DOI: 10.1109/TPDS.2016.2600595]
- J22. Hang Su*, **Dakai Zhu**, and Scott Brandt, “An Elastic Mixed-Criticality Task Model and Early-Release EDF Scheduling Algorithms”, *ACM Transactions on Embedded Computing Systems (TO-DAES)*, Vol. 22, no. 2 (Article No. 28), December 2016, [DOI: 10.1145/2984633]
- J21. Jing Liu, Kenli Li, **Dakai Zhu**, Jianjun Han and Keqin Li, “Minimizing Cost of Scheduling Tasks on Heterogeneous Multicore Embedded Systems”, in *ACM Transactions on Embedded Computing Systems (TECS)*, Vol. 16, no. 2 (Article No. 36), December 2016, [DOI: 10.1145/2935749]
- J20. Xiaomin Zhu, Ji Wang, Hui Guo, **Dakai Zhu**, Laurence T. Yang and Ling Liu, **Fault-Tolerant Scheduling for Real-Time Workflows with Elastic Resource Provisioning in Clouds**, in *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, Vol. 27, no. 12, pp. 3501-3517 December 2016, [DOI: 10.1109/TPDS.2016.2543731]
- J19. Rehana Begam*, Qin Xia, **Dakai Zhu**, and Hakan Aydin, “Preference-Oriented Fixed-Priority Scheduling for Real-Time Systems”, *Journal of System Architecture (JSA)*, Vol. 69, pp. 1-14, September 2016, [DOI:10.1016/j.sysarc.2016.07.005]
- J18. Mohammad A. Haque, Hakan Aydin and **Dakai Zhu**, “Energy-Aware Standby-Sparing for Fixed-Priority Real-Time Task Sets”, in the *Journal of Sustainable Computing, Informatics and Systems (SUSCOM)*, vol. 6, pp. 81-93, Jun. 2015 [DOI: 10.1016/j.suscom.2014.05.001]
- J17. Jian-Jun Han, Man Lin, **Dakai Zhu** and Laurence T. Yang “Contention-Aware Energy Management Scheme for NoC-based Multicore Real-Time Systems”, in *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, vol. 26, no. 3, pp. 691-701, Mar. 2015 [DOI: 10.1109/TPDS.2014.2307866]

- J16. Yifeng Guo*, Hang Su*, **Dakai Zhu**, and Hakan Aydin, “Preference-Oriented Real-Time Scheduling and Its Application in Fault-Tolerant Systems”, in the *Journal of System Architecture (JSA)*, vol. 61, no. 2, pp. 127-139, Feb. 2015 [DOI: 10.1016/j.sysarc.2014.12.001]
- J15. Jian-Jun Han, **Dakai Zhu**, Xiaodong Wu, Laurence T. Yang and Hai Jin, “Multiprocessor Real-Time Systems with Shared Resources: Utilization Bound and Mapping”, in *IEEE Transactions on Parallel and Distributed Systems*, vol. 25, no. 11, pp. 2981-2991, Nov. 2014, [DOI: 10.1109/TPDS.2013.302]
- J14. Geoffrey Nelissen, Hang Su*, Yifeng Guo*, **Dakai Zhu**, Vincent Nelis and Joel Goossens, “An Optimal Boundary Fair Scheduling Algorithm for Sporadic Tasks in Discrete-Time Systems”, in *Real-Time Systems: The International Journal of Time-Critical Computing Systems*, vol. 50, no. 4, pp. 456-508, Jul. 2014 [DOI: 10.1007/s11241-014-9201-0]
- J13. Yulei Wu, Geyong Min, **Dakai Zhu** and Laurence T. Yang, “An Analytical Model for On-Chip Interconnects in Multimedia Embedded Systems”, in *ACM Transactions on Embedded Computing Systems (TECS) - Special Section on ESTIMedia’10*, vol. 13, no. 1s, Article No. 29, Nov. 2013 [DOI: 10.1145/2536747.2536751]
- J12. Baoxian Zhao, Hakan Aydin and **Dakai Zhu**, “Shared Recovery for Energy Efficiency and Reliability Enhancements in Real-Time Applications with Precedence Constraints”, *ACM Transactions on Design Automation of Electronic Systems (TODAES)*, vol. 18, no. 2, Article no. 23 (21 pages), March 2013 [DOI: 10.1145/2442087.2442094]
- J11. Jian-Jun Han, Xiaodong Wu, **Dakai Zhu**, Hai Jin, Laurence T. Yang and Jean-Luc Gaudiot, “Synchronization-Aware Energy Management for VFI-based Multicore Real-Time Systems”, *IEEE Transactions on Computers*, Vol. 61, no. 12, pp. 1682-1696, December, 2012 [DOI: 10.1109/TC.2012.136]
- J10. **Dakai Zhu**, Xuan Qi*, Daniel Mossé and Rami Melhem, “An Optimal Boundary Fair Scheduling Algorithm for Multiprocessor Real-Time Systems”; *Journal of Parallel and Distributed Computing (JPDC)*, Vol. 71, pp. 1411-1425, June 2011 [DOI: 10.1016/j.jpdc.2011.06.003] Citations: 23 (Google Scholar)
- J9. Xuan Qi*, and **Dakai Zhu**, “Energy Efficient Block-Partitioned Multicore Processors for Parallel Applications”, *Journal of Computer Science and Technology, Special Issue on High-Performance Computing for Embedded Multicore Systems*, vol. 26, no. 3, pp. 418-433, May 2011 [DOI: 10.1007/s11390-011-1144-5]
- J8. Xuan Qi*, **Dakai Zhu** and Hakan Aydin, “Cluster Scheduling for Real-Time Systems: Utilization Bounds and Run-Time Overhead”, *Real-Time Systems: The International Journal of Time-Critical Computing Systems, Special Issue on Embedded and Real-Time Computing Systems and Applications*, vol.47, no. 3, pp. 253-284, May 2011 [DOI: 10.1007/s11241-011-9121-1]
- J7. Xuan Qi*, **Dakai Zhu** and Hakan Aydin, “Global Scheduling Based Reliability-Aware Power Management for Multiprocessor Real-Time Systems”, *Real-Time Systems: The International Journal of Time-Critical Computing Systems, Special Issue on Energy Aware Real-Time Systems*, vol. 47, no. 2, pp. 109-142, March 2011 [DOI: 10.1007/s11241-011-9117-x]
- J6. **Dakai Zhu**, “Reliability-Aware Dynamic Energy Management in Dependable Embedded Real-Time Systems”, *ACM Transactions on Embedded Computing Systems*, vol. 10, no. 2, Article 26 (27 pages), December, 2010 [DOI: 10.1145/1880050.1880062]
- J5. Baoxian Zhao, Hakan Aydin and **Dakai Zhu**, “On Maximizing Reliability of Real-Time Embedded Applications under Hard Energy Constraint”, *IEEE Transactions on Industrial Informatics*, vol. 6, no. 3, pp. 316 - 328, August 2010 [DOI: 10.1109/TII.2010.2051970]
- J4. **Dakai Zhu** and Hakan Aydin, “Reliability-Aware Energy Management for Periodic Real-Time

Tasks”, *IEEE Transactions on Computers*, vol. 58, no. 10, pp. 1382 - 1397, IEEE Computer Society, October 2009 [DOI: 10.1109/TC.2009.56] Citations: 101 (Google Scholar)

- J3. **Dakai Zhu**, Rami Melhem and Daniel Mossé, “Energy Efficient Redundant Configurations for Real-Time Parallel Reliable Servers”, *Real-Time Systems: The International Journal of Time-Critical Computing Systems* vol. 41, no. 3, pp. 195 - 221, Kluwer Academic Publishers, April 2009 [DOI: 10.1007/s11241-009-9067-8]
- J2. **Dakai Zhu**, Daniel Mossé and Rami Melhem, “Power Aware Scheduling for AND/OR Graph in Real-Time Systems”, *IEEE Transactions on Parallel and Distributed Systems*, vol. 15, no. 9, pp. 849-864, IEEE Computer Society, September 2004 [DOI: 10.1109/TPDS.2004.45] Citations: 68 (Google Scholar)
- J1. **Dakai Zhu**, Rami Melhem and Bruce R. Childers, “Scheduling with Dynamic Voltage/Speed Adjustment Using Slack Reclamation in Multi-Processor Real-Time Systems”, *IEEE Transactions on Parallel and Distributed Systems*, vol. 14, no. 7, pp. 686-700, IEEE Computer Society, July 2003 [DOI: 10.1109/TPDS.2003.1214320] Citations: 386 (Google Scholar)

- *Refereed Conference Papers*

- C47. Hamidreza Moradi*, Wei Wang and **Dakai Zhu**, “Adaptive Performance Modeling and Prediction of Applications in Multi-Tenant Clouds”, in the *Proc. of the 21st IEEE Int’l Conference on High Performance Computing and Communications (HPCC)*, 2019
- C46. Rehana Begam*, Hamidreza Moradi*, Wei Wang and **Dakai Zhu**, “Flexible VM Provisioning for Time-Sensitive Applications with Multiple Execution Options”, in the *Proc. the 2018 IEEE International Conference on Cloud Computing (CLOUD)*, San Francisco, CA, Jul. 2-7, 2018
- C45. Jianjun Han, Wen Cai and **Dakai Zhu**, “Resource-Aware Partitioned Scheduling for Heterogeneous Multicore Real-Time Systems”, in the *Proc. the 55th Design Automation Conference (DAC)*, San Francisco, CA, Jun. 24-28, 2018
- C44. Sam Silvestro, Timothy Yuen, Corey Crosser, **Dakai Zhu**, Turgay Korkmaz and Tongping Liu, “A User Space-based Project for Practicing Core Memory Management Concepts”, in the *Proc. of ACM Technical Symposium on Computer Science Education (SIGCSE)*, Baltimore, MD, Feb. 21-24, 2018
- C43. Rehana Begam*, Wei Wang and **Dakai Zhu**, “Virtual Machine Provisioning for Applications with Multiple Deadlines in Resource-Constrained Clouds”, in the *Proc. of the 19th IEEE Int’l Conference on High Performance Computing and Communications (HPCC)*, Bangkok, Thailand, Dec. 18-20, 2017
- C42. Abhishek Roy, Hakan Aydin and **Dakai Zhu**, “Energy-Efficient Primary/Backup Scheduling Techniques for Heterogeneous Multicore Systems”, in the *Proc. of the 8th Int’l Green and Sustainable Computing Conference (IGSC)*, Orlando, FL, Oct. 23-25, 2017
- C41. Abhishek Roy, Hakan Aydin and **Dakai Zhu**, “Energy-Aware Standby-Sparing on Heterogeneous Multicore Systems”, in the *Proc. of the 54th Design Automation Conference (DAC)*, Austin, TX, Jun. 18-22, 2017
- C40. Abhishek Roy, Hakan Aydin and **Dakai Zhu**, “On Task Period Assignment in Multiprocessor Real-Time Control Systems”, in the *Proc. of the 24th International Conference on Real-Time Networks and Systems (RTNS)*, Brest, France, Oct. 19-21, 2016
- C39. Jian-Jun Han, Xin Tao, **Dakai Zhu** and Hakan Aydin, “Criticality-Aware Partitioning for Multicore Mixed-Criticality Systems”, in the *Proc. of the 45th International Conference on Parallel Processing (ICPP)*, Philadelphia, PA, Aug. 16-19, 2016.

- C38. Hang Su*, Peng Deng, **Dakai Zhu**, and Qi Zhu, “Fixed-Priority Elastic Mixed-Criticality Systems: Schedulability Analysis and Performance Optimization”, in the *Proc. of the IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, Daegu, South Korea, Aug. 17-19, 2016, IEEE Computer Society.
- C37. Hang Su*, Jiafeng Zhu, Masood Mortazavi, Guangyu Shi and **Dakai Zhu**, “Zero-Penalty Scheduling: A Container-based Map/Reduce Tasks Execution Infrastructure in Hadoop Scheduler”, in the *Proc. of the 15th IEEE International Conference on Computer and Information Technology (CIT)*, Liverpool, UK, Oct. 26-28, 2015, IEEE Computer Society.
- C36. Hang Su*, **Dakai Zhu** and Jiafeng Zhu, “On the Implementation of RT-FAIR Scheduling Framework in Linux”, in the *Proc. of the 14th IEEE International Conference on Ubiquitous Computing and Communications (IUCC)*, Liverpool, UK, Oct. 26-28, 2015, IEEE Computer Society.
- C35. Rehana Begam* and **Dakai Zhu**, “Time-Sensitive Virtual Machines Provisioning and Resource Allocation in Clouds” (*invited paper*), in the *Proc. of the 17th IEEE International Conference on High Performance Computing and Communications (HPCC)*, New York, USA, Aug. 24-26, 2015, IEEE Computer Society.
- C34. Rehana Begam*, **Dakai Zhu** and Hakan Aydin, “Preference-Oriented Fixed-Priority Scheduling for Real-Time Systems”, in the *Proc. of the 12th IEEE International Conference on Embedded Computing (EmbeddedCom)*, co-located with *DASC*, Dalian, China, Aug. 24-27, 2014, IEEE Computer Society. (**Acceptance rate: 29%**) **Best Paper Award**
- C33. Hang Su*, Nan Guan and **Dakai Zhu**, “Service Guarantee Exploration for Mixed-Criticality Systems”, in the *Proc. of the IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, Chongqing, China, Aug. 20-22, 2014, IEEE Computer Society. (**Acceptance rate: 23%**)
- C32. Mohammad A. Haque, Hakan Aydin and **Dakai Zhu**, “Real-Time Scheduling under Fault Bursts with Multiple Recovery Strategy”, in the *Proc. Of the 20th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)*, Berlin, Germany, April 15-17, 2014, IEEE Computer Society. (**Acceptance rate: 20%**)
- C31. Hang Su*, **Dakai Zhu** and Daniel Mosse, “Scheduling Algorithms for Elastic Mixed-Criticality Tasks in Multicore Systems”, in the *Proc. of the IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, Taipei, Taiwan, Aug. 19-21, 2013, IEEE Computer Society. (**Acceptance rate: 30%**)
- C30. Yifeng Guo*, **Dakai Zhu** and Hakan Aydin, “Generalized Standby-Sparing Techniques for Energy-Efficient Fault Tolerance in Multiprocessor Real-Time Systems”, in the *Proc. of the IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, Taipei, Taiwan, Aug. 19-21, 2013, IEEE Computer Society. (**Acceptance rate: 30%**)
- C29. Mohammad A. Haque, Hakan Aydin and **Dakai Zhu**, “Energy Management of Standby-Sparing Systems for Fixed-Priority Real-Time Workloads”, in the *Proc. Of the Second International Green Computing Conference (IGCC)*, Arlington, VA, June 27-29, 2013, IEEE Computer Society.
- C28. Mohammad A. Haque, Hakan Aydin and **Dakai Zhu**, “Energy-Aware Task Replication to Manage Reliability for Periodic Real-Time Applications on Multicore Platform”, in the *Proc. Of the Second International Green Computing Conference (IGCC)*, Arlington, VA, June 27-29, 2013, IEEE Computer Society.
- C27. Hang Su* and **Dakai Zhu**, “An Elastic Mixed-Criticality Task Model and Its Scheduling Algorithm”, in the *Proc. of the Design, Automation and Test in Europe (DATE)*, Grenoble, France, Mar. 18-22, 2013, IEEE Computer Society. (**Acceptance rate: 16%**) **Citations: 35 (Google Scholar)**

- C26. Baoxian Zhao, Hakan Aydin and **Dakai Zhu**, “Energy Management under General Task-Level Reliability Constraints”, in the *Proc. of the 18th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)*, Beijing, China, Apr. 16-19, 2012, IEEE Computer Society. (**Acceptance rate: 24%**) **Citations: 24 (Google Scholar)**
- C25. Mohammad A. Haque, Hakan Aydin and **Dakai Zhu**, “Energy-Aware Standby-Sparing Technique for Periodic Real-Time Applications”, in the *Proc. of the IEEE International Conference on Computer Design (ICCD)*, Amherst, MA, Oct. 9-12, 2011. IEEE Computer Society. (**Acceptance rate: 28%**)
- C24. Yifeng Guo*, **Dakai Zhu** and Hakan Aydin, “Reliability-Aware Power Management for Parallel Real-Time Applications with Precedence Constraints”, in the *Proc. Of the Second International Green Computing Conference (IGCC)*, Orlando, FL, July 25-28, 2011. IEEE Computer Society. (**Acceptance rate: 31%**)
- C23. Baoxian Zhao, Hakan Aydin and **Dakai Zhu**, “Generalized Reliability-Oriented Energy Management for Real-Time Embedded Applications”, in the *Proc. of the 48th Design Automation Conference (DAC)*, San Diego, CA, June 5-10, 2011, ACM. (**Acceptance rate: 23%**) **Citations: 26 (Google Scholar)**
- C22. Xuan Qi*, **Dakai Zhu** and Hakan Aydin, “Global Reliability-Aware Power Management for Multiprocessor Real-Time Systems”, in the *Proc. of the 16th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, Macau SAR, China, August 23 - 25, 2010. IEEE Computer Society. (**Acceptance rate: 38%**)
- C21. Xuan Qi*, **Dakai Zhu** and Hakan Aydin, “A Study of Utilization Bound and Run-Time Overhead for Cluster Scheduling in Multiprocessor Real-Time Systems”, in the *Proc. of the 16th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, Macau SAR, China, August 23 - 25, 2010. IEEE Computer Society. (**Acceptance rate: 38%**)
- C20. Yifeng Guo*, Fanxin Kong, **Dakai Zhu**, Ali Tosun and Qingxu Deng, “Sensor Placement for Lifetime Maximization in Monitoring Oil Pipelines”, in the *Proc. of the IEEE/ACM First International Conference on Cyber-Physical Systems (ICCPs)*, Stockholm, Sweden, April 12-16, 2010, ACM. (**Acceptance rate: 28%**) **Citations: 26 (Google Scholar)**
- C19. Baoxian Zhao, Hakan Aydin and **Dakai Zhu**, “Enhanced Reliability-Aware Power Management through Shared Recovery Technique”, in the *Proc. of the IEEE/ACM International Conference on Computer Aided Design (ICCAD)*, pages 63–70, San Jose, CA, November 2-5, 2009, ACM. (**Acceptance rate: 26%**) **Citations: 31 (Google Scholar)**
- C18. **Dakai Zhu**, Yifeng Guo* and Ali Tosun, “Multi-Path Planning for Mobile Element to Prolong the Lifetime of Wireless Sensor Networks”, in the *Proc. of the IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, pages 41–50, Beijing, China, August 24 - 26, 2009, IEEE Computer Society. (**Acceptance rate: 31%**)
- C17. **Dakai Zhu**, Hakan Aydin and Jian-Jia Chen, “Optimistic Reliability Aware Energy Management for Real-Time Tasks with Probabilistic Execution Times”, in the *Proc. of the IEEE Real-Time Systems Symposium (RTSS)*, pages 313–322, Barcelona, Spain, November 30 - December 3, 2008, IEEE Computer Society. (**Acceptance rate: 23%**) **Citations: 24 (Google Scholar)**
- C16. Baoxian Zhao, Hakan Aydin and **Dakai Zhu**, “Reliability-Aware Dynamic Voltage Scaling for Energy-Constrained Real-Time Embedded Systems”, in the *Proc. of the IEEE Int’l Conference on Computer Design (ICCD)*, pages 633 – 639, Lake Tahoe, CA, October 12 - 15, 2008, IEEE Computer Society. (**Acceptance rate: 34%**) **Citations: 31 (Google Scholar)**
- C15. **Dakai Zhu**, Xuan Qi* and Hakan Aydin, “Energy Management for Periodic Real-Time Tasks with Variable Assurance Requirements”, in the *Proc. of the IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, pages 259–268, Kaohsiung, Taiwan ROC, August 25-27, 2008, IEEE Computer Society. (**Acceptance rate: 26%**)

- C14. Xuan Qi* and **Dakai Zhu**, “Power Management for Real-Time Embedded Systems on Block-Partitioned Multicore Platforms”, in the *Proc. of the International Conference on Embedded Software and Systems (ICCESS)*, pages 110–117, Chengdu, P.R.China, July 29-31, 2008, IEEE Computer Society. **(Acceptance rate: 21%) Best Paper Award.**
- C13. **Dakai Zhu**, Xuan Qi* and Hakan Aydin, “Priority-Monotonic Energy Management for Real-Time Systems with Reliability Requirements”, in the *Proc. of the 25th IEEE International Conference on Computer Design (ICCD)*, pages 629-635, Lake Tahoe, CA, Oct. 2007, IEEE Computer Society. **(Acceptance rate: 33%)**
- C12. **Dakai Zhu** and Hakan Aydin, “Reliability-Aware Energy Management for Periodic Real-Time Tasks”, in the *Proc. of the IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)*, pages 225-235, Bellevue WA, April 2007, IEEE Computer Society. **(Acceptance rate: 28%) Citations: 21 (Google Scholar)**
- C11. Hakan Aydin, Vinay Devadas and **Dakai Zhu**, “System-level Energy Management for Periodic Real-Time Tasks”, in the *Proc. of the 27th IEEE Real-Time Systems Symposium (RTSS)*, pp. 313-322, Rio de Janeiro, Brazil, December 2006, IEEE Computer Society. **(Acceptance rate: 24%) Citations: 115 (Google Scholar)**
- C10. **Dakai Zhu** and Hakan Aydin, “Energy Management for Real-Time Embedded Systems with Reliability Requirements”, in the *Proc. of the IEEE/ACM International Conference on Computer Aided Design (ICCAD)*, pages 528-534, San Jose, CA, November 2006, ACM. **(Acceptance rate: 24%) Citations: 59 (Google Scholar)**
- C9. **Dakai Zhu**, “Reliability-Aware Dynamic Energy Management in Dependable Embedded Real-Time Systems”, in the *Proc. of the IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)*, pages 397 - 407, San Jose, CA, April 2006, IEEE Computer Society. **(Acceptance rate: 30%) Citations: 78 (Google Scholar)**
- C8. Ruibin Xu, **Dakai Zhu**, Cosmin Rusu, Rami Melhem and Daniel Mossé, “Energy Efficient Policies for Embedded Clusters”, in the *Proc. of the ACM SIGPLAN/SIGBED Conference on Languages, Compilers, and Tools for Embedded Systems (LCTES)*, pages 1-10, Chicago, June 2005, ACM. **(Acceptance rate: 26%) Citations: 64 (Google Scholar)**
- C7. **Dakai Zhu**, Rami Melhem and Daniel Mossé, “Energy Efficient Configuration for QoS in Reliable Parallel Servers”, in the *Proc. of the Fifth European Dependable Computing Conference (EDCC)*, pages 122-139, Budapest, Hungary, April 2005, Springer. **(Acceptance rate: 36%)**
- C6. **Dakai Zhu**, Rami Melhem and Daniel Mossé, “The Effects of Energy Management on Reliability in Real-Time Embedded Systems”, in the *Proc. of the IEEE/ACM Int’l Conference on Computer Aided Design (ICCAD)*, pages 35-40, San Jose, CA, November 2004, ACM. **(Acceptance rate: 24%) Citations: 181 (Google Scholar)**
- C5. **Dakai Zhu**, Rami Melhem, Daniel Mossé and E. (Mootaz) Elnozahy, “Analysis of an Energy Efficient Optimistic TMR Scheme”, in the *Proc. of the International Conference on Parallel and Distributed Systems (ICPADS)*, pages 559-568, Newport Beach, CA, July 2004, IEEE Computer Society. **(Acceptance rate: 30%) Citations: 32 (Google Scholar)**
- C4. **Dakai Zhu**, Daniel Mossé and Rami Melhem, “Multiple Resource Periodic Scheduling Problem: how much fairness is necessary?”, in the *Proc. of the 24th IEEE Real-Time System Symposium (RTSS)*, pages 142-151, Cancun Mexico, December 2003, IEEE Computer Society. **Citations: 88 (Google Scholar)**
- C3. Ramesh Mishra, Namrata Rastogi, **Dakai Zhu**, Daniel Mossé and Rami Melhem, “Energy Aware Scheduling for Distributed Real-Time Systems”, in the *Proc. of the International Parallel & Distributed Processing Symposium (IPDPS)*, pages 21-29, Nice France, April 2003, IEEE Computer Society. **(Acceptance rate: 30%) Citations: 164 (Google Scholar)**

C2. **Dakai Zhu**, Nevine AbouGhazleh, Daniel Mossé and Rami Melhem, “Power Aware Scheduling for AND/OR Graph in Multi-Processor Real-Time Systems”, in the *Proc. of the International Conference on Parallel Processing (ICPP)*, pages 593-601, Vancouver B.C. Canada, August 2002, IEEE Computer Society. **(Acceptance rate: 36%)**

Citations: 34 (Google Scholar)

C1. **Dakai Zhu**, Rami Melhem and Bruce R. Childers, “Scheduling with Dynamic Voltage/Speed Adjustment Using Slack Reclamation in Multi-Processor Real-Time Systems”, in the *Proc. of the 22th IEEE Real-Time System Symposium (RTSS)*, pages 84-94, London England, December 2001, IEEE Computer Society.

- *Refereed Workshop/Short Papers and Posters*

W10. Yifeng Guo*, **Dakai Zhu** and Hakan Aydin, “Efficient Power Management Schemes for Dual-Processor Fault-Tolerant Systems”, in the *Proc. of The First Workshop on Highly-Reliable Power-Efficient Embedded Designs (HARSH)*, in conjunction with HPCA, Shenzhen, China, Feb. 23-27, 2013, **Best Paper Award**

W9. Yifeng Guo* and **Dakai Zhu**, “Mixed-EDF Scheduling and Its Application to Energy Efficient Fault Tolerance in Real-Time Systems”, in *Works In Progress (WiP) Session of the IEEE Real-Time System Symposium (RTSS)*, Vienna, Austria, Nov. 30- Dec. 2, 2011

W8. Geoffrey Nelissen, Shelby Funk, **Dakai Zhu** and Joel Goossens, “How Many Boundaries Are Required to Ensure Optimality in Multiprocessor Scheduling?”, in *Proc. of the 2nd Int’l Real-Time Scheduling Open Problems Seminar (RTSOPS)*, in conjunction with ECRTS, Porto, Portugal, July 6-8, 2011

W7. Yifeng Guo*, Hang Su* and **Dakai Zhu**, “An Optimal Discrete-Time Based Boundary Fair Scheduler for Sporadic Tasks in Multiprocessor Real-Time Systems”, in *Works In Progress (WiP) Session of the IEEE Real-Time System Symposium (RTSS)*, San Diego, CA, December 1-3, 2010

W6. **Dakai Zhu** and Chunjiang Qian “Challenges in Future Automobile Control Systems with Multicore Processors”, position paper in the *Workshop on Developing Dependable and Secure Automotive Cyber-Physical Systems (CPS) from Components*, Troy, Michigan, October 28-29, 2010

W5. **Dakai Zhu** and Ali S. Tosun, “Adaptive Path Scheduling for Mobile Element to Prolong the Lifetime of Wireless Sensor Networks”, in the *Supplement Proc. of the IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)*, *Work-in-Progress (WiP) session*, St. Louis, MO, April 21-24, 2008. Selected to appear in ACM SIGBED Review, Vol. 5-2, (July 2008).

W4. Frederick E. Diehl, Joshua J. Curtis*, Salvador J. Rodriguez*, Ali S. Tosun and **Dakai Zhu**, “Power-Efficient Real-Time Data Collection using Mobile Robots”, in the *Supplement Proc. of the IEEE Real-Time System Symposium (RTSS) for Works In Progress (WiP) Session*, Tucson, AZ, December 3-6, 2007

W3. **Dakai Zhu** and Hakan Aydin, “Low-Power Reliable Real-Time Embedded Systems”, in *IBM Austin Conference on Energy-Efficient Design (ACEED) - poster*, March 2007.

W2. **Dakai Zhu** and Hakan Aydin, “Reliability Effects of Process and Thread Redundancy on Chip Multiprocessors”; in *Supplement Proc. of the Int’l Conf. on Dependable Systems and Networks (DSN) - Fast Abstracts*, pages 212-213, Philadelphia, June 2006.

W1. Ruibin Xu, Cosmin Rusu, **Dakai Zhu**, Daniel Mossé, and Rami Melhem, “Practical Energy-Efficient Policies for Server Clusters”, *The 6th Brazilian Workshop on Real-Time*, Gramado, Brazil, May 2004.

- *Technical Reports*

- T15. Yifeng Guo*, **Dakai Zhu**, Hakan Aydin and Laurence T. Yang “Energy-Efficient Scheduling of Primary/Backup Tasks in Multiprocessor Real-Time Systems (Extended Version)”, *CS-TR-2013-016, Department of Computer Science, University of Texas at San Antonio*, Oct. 2013
- T14. Hang Su*, **Dakai Zhu** and Daniel Mosse “Scheduling Algorithms for Elastic Mixed-Criticality Tasks in Multicore Systems (Extended Version)”, *CS-TR-2013-010, Department of Computer Science, University of Texas at San Antonio*, June 2013
- T13. Yifeng Guo*, Hang Su*, **Dakai Zhu** and Hakan Aydin, “Preference-Oriented Scheduling Framework for Periodic Real-Time Tasks (Extended Version)”, *CS-TR-2013-007, Department of Computer Science, University of Texas at San Antonio*, May 2013
- T12. Jian-Jun Han, **Dakai Zhu**, Xiaodong Wu, Laurence T. Yang and Hai Jin, “Multiprocessor Real-Time Systems with Shared Resources (Extended Version)”, *CS-TR-2013-002, Department of Computer Science, University of Texas at San Antonio*, Jan. 2013
- T11. Yifeng Guo*, Hang Su*, **Dakai Zhu** and Hakan Aydin, “Preference-Oriented Scheduling Framework for Periodic Real-Time Tasks and Its Application to Fault-Tolerant Real-Time Systems (Extended Version)”, *CS-TR-2012-009, Department of Computer Science, University of Texas at San Antonio*, May 2012
- T10. Jian-Jun Han, Xiaodong Wu, **Dakai Zhu**, Hai Jin, Laurence T. Yang and Jean-Luc Gaudiot, “Synchronization-Aware Energy Management for VFI-based Multicore Real-Time Systems (Extended Version)”, *CS-TR-2012-003, Department of Computer Science, University of Texas at San Antonio*, Feb. 2012
- T9. Xuan Qi, **Dakai Zhu** and Hakan Aydin, “Global Scheduling Based Reliability-Aware Power Management for Multiprocessor Real-Time Systems”, *CS-TR-2010-014, Department of Computer Science, University of Texas at San Antonio*, Sept. 2010
- T8. Xuan Qi and **Dakai Zhu**, “Energy Efficient Block-Partitioned Multicore Processors for Parallel Applications”, *CS-TR-2010-009, Department of Computer Science, University of Texas at San Antonio*, Jul. 2010
- T7. **Dakai Zhu**, Xuan Qi*, Daniel Mossé and Rami Melhem, “An Optimal Boundary Fair Scheduling Algorithm for Multiprocessor Real-Time Systems”; *CS-TR-2009-005, Department of Computer Science, University of Texas at San Antonio*, Jun. 2009
- T6. **Dakai Zhu**, Yifeng Guo* and Ali S. Tosun, “Multi-Path Planning for Mobile Element to Prolong the Lifetime of Wireless Sensor Networks”; *CS-TR-2008-016, Department of Computer Science, University of Texas at San Antonio*, Nov. 2008
- T5. **Dakai Zhu**, Xuan Qi*, and Hakan Aydin, “Energy Management for Periodic Real-Time Tasks with Variable Assurance Requirements”; *CS-TR-2008-007, Department of Computer Science, University of Texas at San Antonio*, Jun. 2008
- T4. **Dakai Zhu** and Ali Tosun, “RF Communication for LEGO/Handy Board with Tmote”, *CS-TR-2008-006, Department of Computer Science, University of Texas at San Antonio*, May, 2008
- T3. **Dakai Zhu** and Hakan Aydin, “Reliability-Aware Energy Management for Periodic Real-Time Tasks”; *CS-TR-2008-005, Department of Computer Science, University of Texas at San Antonio*, Mar. 2008
- T2. **Dakai Zhu**, Rami Melhem and Daniel Mossé, “Energy Efficient Redundant Configurations for Reliable Servers in Distributed Systems”; *CS-TR-2007-001, Department of Computer Science, University of Texas at San Antonio*, Feb. 2007

- T1. **Dakai Zhu**, “Reliability-Aware Dynamic Energy Management in Dependable Embedded Real-Time Systems”; *CS-TR-2006-001*, *Department of Computer Science, University of Texas at San Antonio*, Jan. 2006; (accepted by ACM TECS, May 2006)

SCHOLARLY PRESENTATIONS

- Invited Talk: “Scheduling Algorithms for Resource-Constrained Systems”, Xi’an Jiaotong University, XiDian University, University of Electronic Science and Technology of China, May, 2018;
- Invited Talk: “Low-Power Dependable Computing”, Zheng Zhou University, May, 2016;
- Invited Talk: “Do It Early or Late? The Preference-Oriented Scheduling Framework”, The Hong Kong Polytechnic University, City University of Hong Kong, and Shenzhen Institutes of Advanced Technology (SIAT), Chinese Academy of Science, Hu Nan University, May, 2016;
- Invited Talk: “An Elastic Mixed-Criticality Scheduling Framework”, Huazhong University of Science Technology, August, 2014;
- Invited Talk: “Exploiting Primary/Backup for Energy-Efficient Fault Tolerance in Parallel Real-Time Systems”, Huazhong University of Science Technology, March, 2013;
- Invited Talk: “Preference-Oriented Scheduling and Its Applications”, University of Pittsburgh, Jan, 2013;
- Invited Talk: “Fair Scheduling in Multiprocessor Real-time Systems”, Northeastern University, Shenyang, China, July 2011;
- Invited Talk: “Research on Low Power Reliable Computing”, Northeastern University, Shenyang, China, August 2010;
- Invited Talk: “Optimistic Reliability Aware Energy Management for Real-Time Tasks with Probabilistic Execution Times”, Zhejiang University, Hangzhou, China, July 2008;
- Invited Talk: “Reliability-Aware Energy Management for Real-Time Systems”, Tsinghua University, Beijing, China, June 2008;

TEACHING ACTIVITIES

- *Organized Courses*
Undergraduate (CS1063, CS1713, CS3733, CS4833), graduate (CS5523, CS6463, CS7123)
 - CS 1063 (**taught 10 times**): *Introduction to Computer Programming I*, Fall 2007, Spring 2008, Fall 2008, Fall 2009, Fall 2010, Fall 2011, Fall 2013, Spring 2014, Spring 2015, Fall 2015;
 - CS 1713 (**taught 2 times**): *Introduction to Computer Programming II (in C)*, Spring 2016, Fall 2017;
 - CS 1713 (**taught 3 times**): *Introduction to Computer Programming II (in Java)*, Fall 2005, Fall 2006, Spring 2007;
 - CS 3733 (**taught 5 time**): *Operating Systems*, Fall 2015, Fall 2016, Fall2017, Spring 2018, Fall 2018;
 - CS 4833 (**taught 6 times**): *Embedded Systems*, Summer 2007, Fall 2008, Fall 2009, Fall 2010, Fall 2014, Fall 2018;
 - CS 5523 (**taught 10 times**): *Operating Systems*, Spring 2005, Spring 2006, Spring 2007, Spring 2008, Spring 2009, Spring 2010, Spring 2011, Spring 2012, Fall 2012, Fall 2014;
 - CS 6463 (**taught 1 time**): *Adv. Topics on OS*, Fall 2016
 - CS 7123 (**taught 1 time**): *Research Seminar*, Fall 2012

- *Ph.D. Dissertations (4 completed and 1 on-going)*
 - **Hamidreza Moradi**, *Ph.D.* (ongoing, since 2017), “*Resource Allocation in Hybrid Clouds*”;
 - **Rehana Begam**, *Ph.D.* (graduated, August 2017), “*Time-Sensitive VM Provisioning for Resource-Constrained Clouds*”;
 - **Hang Su**, *Ph.D.* (graduated, August 2015), “*An Elastic Mixed-Criticality Scheduling Framework for Cyber-Physical Systems*”;
 - **Yifeng Guo**, *Ph.D.* (graduated, December 2013), “*Energy-Efficient Fault Tolerance in Multiprocessor Real-Time Systems*”;
 - **Xuan Qi**, *Ph.D.* (graduated, May 2011), “*Scheduling for Energy and Reliability Management on Multiprocessor Real-Time Systems*”;
- *Master Theses (one completed and one incomplete)*
 - **Saeef Ahmad**, *Master* (incomplete, August 2015), “*Investigation of Energy Efficient Fault Tolerance Techniques for Heterogeneous Multicore Systems*”;
 - **Nirali Patel**, *Master* (graduated, December 2007), “*Fixed-Priority Based Reliability-Aware Power Management for Periodic Real-Time Tasks*”;
- *Master/Undergraduate Projects (5 undergraduates; 5 masters)*
 - **Thinh Vo**, *undergraduate*, (Jan. 2016 - Dec. 2017), “*Research on Image Processing and Face Recognition for a Pioneer-3AT Robot*”;
 - **Lauro Perez**, *undergraduate*, (Aug. 2015 - Aug. 2017), “*Exploiting RaspberryPi to Control LEGO Robots*”;
 - **Maricel Flores**, *undergraduate*, (Aug. 2015 - Dec. 2015), “*Exploiting BeagleBone Black to Control LEGO Robots*”;
 - **Curtis Bell**, *Master*, (Jan. 2015 - Dec. 2015), “*Design and Implementation of an Automated Control Algorithm for the Pioneer-3AT Robot*”;
 - **Jonathan Kaufmann**, *Master*, (Dec. 2012-May 2015), “*Integration of GPS and Camera with the Pioneer AT Mobile Robot*”;
 - **Vallikannu Nagappan**, *Master*, (graduated, Jun. 2014-Dec. 2014), “*RFID Application Development for Oil Refinery Monitoring*”;
 - **Armondo Ortega**, *Master*, (graduated, Dec. 2013), “*Controlling and Location Monitoring of a Mobile Robot from an Android Tablet*”;
 - **Salvador J. Rodriguez**, *Master*, (graduated, May 2013), “*Review of GPS Technology and Location Tracking Using the GS407 Receiver*”;
 - **Joshua J. Curtis**, *undergraduate*, (graduated, Dec. 2007), “*Programming of Handyboard and Tmote to Build a Mobile Sensor Element*”;
 - **Salvador J. Rodriguez**, *undergraduate*, (graduated, Dec. 2007), “*Design and Programming of LEGO Robots*”;
- *Member, Dissertation/Proposal/MS Thesis Committees*
 - **Ph.D. Proposal:** Mohammad Mejbah ul Alam, “*Correctness and Performance Debugging of Multithreaded Programs using Hardware Assisted Machine Learning*”, supervised by Dr. Abdullah Muzahid, Aug. 2016
 - **Ph.D. Proposal:** Mohammad Shahedul Islam, “*System Performance Analysis and Guarantee Through Workload Characterization*”, supervised by Dr. Matt Gibson, Dec. 2015
 - **Ph.D. Dissertation:** Ali Tekeoglu, “*Securing Multimedia Communication in Traditional and Emerging Architectures*”, supervised by Dr. Ali Tosun, Jul. 2015
 - **Ph.D. Dissertation:** Lucas A. Wilson, “*The Relentless Execution Model for Task-uncoordinated Parallel Computation in Distributed Memory Environments*”, supervised by Dr. Jeffery von Ronne, May 2015

- **Ph.D. Dissertation:** Andrew Wichmann, “*Task Allocation and Path Planning in Wireless Robot and Sensor Networks*”, supervised by Dr. Turgay Korkmaz, April 2015
- **Ph.D. Proposal:** Ali Tekeoglu, “*Securing Multimedia Communication in Traditional and Emerging Architectures*”, supervised by Dr. Ali Tosun, Dec. 2013
- **Ph.D. Proposal (external):** Muhammad Ali Awan, “*Energy and Temperature Aware Real-Time Systems*”, supervised by Dr. Stefan M. Petters, Faculdade de Engenharia da Universidade do Porto, Portugal, July 2013
- **Ph.D. Dissertation:** Pengjun Pan, “*Energy-Efficiency Secure and Anonymous Communication Protocols for Wireless Sensor Networks*”, supervised by Dr. Rajendra V. Boppana, May 2013
- **Ph.D. Dissertation:** Nihat Altiparmak, “*Improving Performance and Predictability of Storage Arrays*”, supervised by Dr. Ali Tosun, Apr. 2013
- **Ph.D. Dissertation:** Hui Shen, “*A Formal Framework for Analyzing Sequence Diagram*”, supervised by Dr. Jianwei Niu, Dec. 2012
- **Ph.D. Dissertation:** Samira Khan, “*Intelligent Cache Management Techniques for Reducing Memory System Waste*”, supervised by Dr. Daniel A. Jiménez, May 2012
- **Ph.D. Proposal:** Zhe Wang, “*Improving Processor Design by Exploiting Performance Variance*”, supervised by Dr. Daniel A. Jiménez, Apr. 2012
- **Master Thesis:** Siju Samuel, “*Maintaining High Performance in The QR Factorization While Scaling Both Problem Size and Parallelism*”, supervised by Dr. R. Clint Whaley, Apr. 2011
- **Ph.D. Dissertation:** Mark S. Doderer, “*Sidekick: Integrating Knowledge and User Belief to Enable Biological Discovery*”, supervised by Dr. Kay Robbins, Jul. 2010
- **Master Thesis (external):** Yongwen Pan, “*Static and Reliability Aware Energy Management in Real-Time Systems*”, supervised by Dr. Man lin, Saint Francis Xavier University, Canada, Oct. 2010
- **Ph.D. Proposal:** Paul Parker, “*Protecting Critical Secrets on Commodity Hardware and Operating Systems*”, supervised by Dr. Shouhuai Xu, Apr. 2009
- **Master Thesis:** Frederick Eugene Diehl “*Data Collection In a Wireless Sensor Network Using a Mobile Data Collection Agent*”, supervised by Dr. Ali S. Tosun, Dec. 2007
- **Master Thesis:** Luis Ortiz, “*A New Traffic Worm Generator*”, supervised Dr. Chia-Tien Dan Lo, Dec. 2007
- **Ph.D. Dissertation:** Satish Penmatsa, “*Game Theory Based Job Allocation/Load Balancing in Distributed Systems with Communication and Applications to Grid Computing*”, supervised by Dr. Anthony T. Chronopoulos, Dec. 2007
- **Ph.D. Proposal:** Yi-Gang Tai, “*Acceleration of Scientific Applications on Reconfigurable Computing Systems*”, supervised by Dr. Chia-Tien Dan Lo, Nov. 2007
- **Ph.D. Dissertation:** Mayumi Kato, “*Java Memory Compression*”, supervised by Dr. Chia-Tien Dan Lo, May 2007

SERVICE ACTIVITIES

Departmental/College/University Committees:

- Chair, CS Communication Committee, 2016 - present;
- Chair, CS PhD Qualify Exam committee, 2014–present;
- Chair, CS Faculty search committee, 2014-2015;
- Chair, CS Technical reports, 2005-present;
- Member, CS Online CyberSEcurity BA Development, 2015 - present;
- Member, CS PhD Qualify Exam committee, 2005–2014;
- Member, CS Faculty search committee, 2009-2010, 2011-2012, 2013-2014, 2015-16;
- Member, CS Faculty review committee, 2013-2014;
- Member, CS Curriculum committee, member, 2014 - present;

- Member, CS Communication committee, 2009-2011;
- Member, CS Colloquium Coordinator, 2007–2012;
- Member, CS Lab and Facilities committee, 2005-2008;
- Member, COS College Faculty Review Committee (CFRAC), 2013-2015, 2016-2017;
- Member, UTSA University Faculty Grievance Committee, 2013-2015;

Editorship:

- Associate Editor: *Journal of System Architecture (JSA)*, Jun. 2016 – present;
- Associate Editor: *Sustainable Computing, Informatics and Systems (SUSCOM)*, Dec. 2013 – present;
- Associate Editor: *Journal of Circuits, Systems, and Computers (JCSC)*, Jan. 2013 – Jun. 2013;
- Leading Guest Editor: Special issue of *IEEE Transactions on Sustainable Computing (TSUSC)* on *Low-Power Dependable Computing*, 2017;
- Leading Guest Editor: Special issue of *ACM Transactions on Embedded Computing Systems (TECS)* on *Emerging Technologies in Embedded Software and Systems*, 2015;
- Guest Co-Editor: Special issue of *The Journal of Systems Architecture (JSA)* on *High Performance Computing and Communications and Embedded Software and Systems*, 2015;
- Guest Co-Editor: Special issue of *Future Generation Computer Systems (FGCS)* on *Ubiquitous Computing and Future Communication Systems*, 2014;
- Leading Guest Editor: Special issue of *International Journal of Embedded Systems (IJES)* on *Low-Power Real-Time Embedded Computing*, 2006;

Organizing Committee:

- Steering Committee member, IEEE Int'l Conference on Embedded Software and Systems (ICESS), 2016;
- Program Co-Chair, IEEE Int'l Conference on Embedded Software and Systems (ICESS), 2009 and 2015;
- Program Co-Chair, the Workshop on Low-Power Dependable Computing (LPDC), in conjunction with IGSC, 2014 and 2015;
- Program Vice-Chair, the the IEEE International Conference on Internet of Things (iThings), 2013
- Web-Chair, the IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 2007, 2008, 2009, 2010, 2011, 2012;
- Publicity Chair, the IEEE/ACM International Conference on Green Computing and Communications (GreenCom) 2010 and 2011
- Program Co-Chair, Work-in-Progress (WiP) session of the IEEE Real-Time System Symposium (RTSS), 2005, 2009;
- Workshop Co-Chair, the IFIP Int'l Conference on Embedded And Ubiquitous Computing (EUC), 2008;
- Program Co-Chair, the First Int'l Workshop on Wireless Mesh and Ad-hoc Networks (WiMan), 2007 (in conjunction with ICCCN'07);
- Program Co-Chair, the Int'l Workshop on Scheduling Techniques for Real-Time Systems, 2005 (in conjunction with the ICES'05);
- Program Co-Chair, the Second Int'l Workshop on Power-Aware Real-time Computing (PARC) 2005 (in conjunction with the EMSOFT'05);

Technical Program Committee (TPC):

- IEEE Real-Time System Symposium (RTSS), 2005-2006, 2008-2011, 2015, 2017, 2018;
- IEEE Real-Time Technology and Applications Symposium (RTAS), 2006-2008, 2010-2012, 2014, 2015, 2017, 2018;

- IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA), 2009, 2012-2017;
- ACM Symposium on Applied Computing (SAC), 2010, 2011, 2017;
- Design Automation Conference (DAC), Embedded System Design Methodologies Track (ESS2), 2016
- International Conference on Parallel Processing (ICPP), CPS track, 2016
- IEEE International Conference on Green Computing and Communications (GreenCom), 2015;
- The International Green and Sustainable Computing Conference (IGSC), 2011, 2013-2016;
- Design, Automation and Test in Europe (DATE), 2008, 2009, 2013, 2014;
- IFIP Int'l Conference on Embedded And Ubiquitous Computing (EUC), 2005,2007,2008, 2013;
- ACM SIGPLAN/SIGBED Conference on Languages, Compilers and Tools for Embedded Systems (LCTES), 2010;
- The Int'l Conference on Computer Science and its Applications (CSA), 2009
- The Int'l Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS), 2009
- Int'l Conference on Embedded Software and Systems (ICCESS), 2004,2005,2007,2008;
- The Second Int'l Workshop on Cyber-Physical Systems (WCPS), 2009;
- The Int'l Symposium on Embedded Computing (SEC) 2007,2008;
- IEEE Int'l Conference on Sensor Networks, Ubiquitous and Trustworthy Computing (SUTC), 2008
- IEEE International Conference on Computational Science and Engineering (CSE), 2008;
- Int'l Conference on Intelligent Pervasive Computing (IPC) 2007;
- The 2nd Int'l Symposium on Smart Home (SH'07) 2007;
- 2006 International Workshop on Embedded Software Optimization (ESO 2006) (with EUC'06);
- 3rd International Workshop on Embedded Computing, 2006 (with ICPP'06);

External Reviewer for Journals:

- ACM Transactions on Embedded Computing Systems (TECS);
- ACM Transactions on Architecture and Code Optimization (TACO);
- ACM Transactions on Design Automation of Electronic Systems (TODAES);
- IEEE Transactions on Computers (TC);
- IEEE Transactions on Parallel and Distributed Systems (TPDS);
- IEEE Transactions on Cloud Computing (TCC);
- IEEE Transactions on Multi-Scale Computing Systems (TMSCS);
- IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD);
- IEEE Transactions on Very Large Scale Integration Systems (TVLSI);
- IEEE Transactions on Industrial Informatics (TII);
- IEEE Transactions on Mobile Computing (TMC);
- IEEE Transactions on Reliability (TR);
- IEEE Embedded Systems Letters;
- Leibniz Transactions on Embedded Systems;
- Journal of Real-Time Systems (JRTS);
- Journal of Parallel and Distributed Computing (JPDC);
- Journal of System Architecture (JSA);
- Journal of Sustainable Computing, Informatics and Systems (SUSCOM);
- Journal of Computer and System Sciences (JCSS);

- Journal of Computer Science and Technology (JCST);
- Journal of Systems and Software (JSS);
- Journal of Signal Processing Systems (JSPS);
- Journal of Supercomputing (SUPE);
- Journal of Experimental Algorithmics (JEA);
- ASP Journal of Low Power Electronics (JOLPE);
- International Journal of Embedded Systems (IJES);
- Concurrency and Computation: Practice and Experience;
- Frontiers of Computer Science;
- Future Generation Computer Systems;
- Information Processing Letter (IPL);
- Parallel Computing (PARCO);

Grant Proposal Reviews:

- NSF panel, 2009, 2011, 2012 and 2015
- NSERC (Canada) panel, EG of Computer Science, 2017 - 2019
- Hong Kong RGC (Research Grants Council), 2012 and 2015
- Czech Science Foundation, 2014
- Canada Research Chairs, 2014
- Canada NCERC, 2009, 2015

Book Reviews:

- Mc Graw-Hill, “Java Programming: A Brief Introduction” by Herb Schildt, 2012
- Prentice Hall, “Embedded Systems: Principles, Techniques and Applications” by Amit Konar and Alakananda Bhattacharya, 2009
- Prentice Hall, “Distributed Systems: Principles and Paradigms” by Andrew S. Tanenbaum and Maarten van Steen, 2005