

## **Dr. Yann-Hang Lee**

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### **AREAS OF INTERESTS**

Real-time computing, embedded system and software, Computer architecture and multiprocessor systems, Fault-tolerant computing, Distributed computing, and Performance evaluation.

### **EDUCATION**

1. Ph.D. (Computer, Information and Control Eng.): The University of Michigan, 1985.
2. M.S. (Electrical, Computer and System Eng.): Rensselaer Polytechnic Institute, NY, 1982.
3. M.S. (Electrical and Computer Eng.): National Cheng Kung University, R.O.C. 1978.
4. B.S. (Engineering Science): National Cheng Kung University, R.O.C. 1973.

### **PROFESSIONAL EXPERIENCE**

- Professor, School of Computing, Informatics, Decision Systems Engineering, Arizona State University, Tempe, AZ, July. 2000 – present.
- Program Chair, Computer Science and Engineering Program, School of Computing, Informatics, Decision Systems Engineering, Arizona State University, Tempe, AZ, June. 2008 – Dec. 2013.
- Associate Professor and Professor, Computer and Information Science and Engineering Department, University of Florida, Gainesville, Florida, July. 1988 – June 2000.
- Summer visiting position, Motorola Land-Mobile Communication Group, FL, 1995.
- Research Staff Member, Architecture Analysis and Design Group, IBM Thomas J. Watson Research Center, Yorktown Heights, NY, Dec. 1984 - Aug. 1988.

### **TEACHING EXPERIENCE**

- *Graduate level:* Computer architecture, fault-tolerant computing, real-time embedded systems, high-performance computing systems, analysis of algorithms, and performance evaluation.
- *Undergraduate level:* Introduction to computer organization, hardware system design (VHDL and FPGA), data and program structures, embed system programming, and microprocessor embedded systems.

### **JOURNAL PUBLICATIONS**

- [1] K. G. Shin, Yann-Hang Lee, and J. Sasidhar, "Design of a Hierarchical Multi-microprocessor for General Purpose Applications," *IEEE Trans. on Computers*, Vol. C-31, No. 11, Nov. 1982, pp. 1045-1053.
- [2] K. G. Shin and Yann-Hang Lee, "Design and Evaluation of a Fault-Tolerant Multiprocessor Using Hardware Recovery Blocks," *IEEE Trans. on Computers*, Vol. C-33, No. 2, Feb 1984, pp. 113-124.

- [3] K. G. Shin and Yann-Hang Lee, "Error Detection Process: Model, Design, and Its Impact on Computer Performance," *IEEE Trans. on Computers*, Vol. C-33, No. 6, June 1984, pp. 529-540.
- [4] C. M. Krishna, K. G. Shin, and Yann-Hang Lee, "On Optimization Criteria for Checkpoint Placement," *Communications of ACM*, Vol. 27, No. 10, Oct. 1984, pp. 1008-1012.
- [5] K. G. Shin and Yann-Hang Lee, "Evaluation of Error Recovery Blocks used for Cooperating Processes," *IEEE Trans. on Software Engineering*, Vol. SE-10, No. 6, Nov. 1984, pp. 692-700.
- [6] K. G. Shin, C. M. Krishna, and Yann-Hang Lee, "An Unified Method for Evaluating Real-time Computer Controllers and its Application," *IEEE Trans. on Automatic Control*, Vol. AC-30, No. 4, April 1985, pp. 357-366.
- [7] K. G. Shin and Yann-Hang Lee, "Measurement and Application of Fault Latency," *IEEE Trans. on Computers*, Vol. C-35, No. 4, April 1986, pp. 370-375.
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- [9] Yann-Hang Lee, Philip S. Yu, and Bala R. Iyer, "A Progressive Approach to Transaction Recovery in Distributed DB/DC Systems," *IEEE Trans. on Computers*, Vol. C-36, No. 8., Aug. 1987, pp. 976-987.
- [10] Kang G. Shin, Tein-Hsiang Lin, and Yann-Hang Lee, "Optimal Checkpointing of Real-time Tasks," *IEEE Trans. on Computers*, Vol. C-36, No. 11., Nov. 1987, pp. 1328-1341.
- [11] Philip S. Yu, C. M. Krishna, and Yann-Hang Lee, "Optimal Design and Sequential Analysis of VLSI Testing Strategy," *IEEE Trans. on Computers*, Vol. C-37, No. 3., March 1988, pp. 339-347.
- [12] Yann-Hang Lee and K. G. Shin, "Optimal Design and Use of Retry in Fault-Tolerant Computer Systems," *Journal of ACM*, Vol. 35, No. 1, January 1988, pp. 45-69.
- [13] Philip S. Yu, Simonetta Balsamo, and Yann-Hang Lee, "Dynamic Load Sharing in Distributed Database Environment," *IEEE Trans. on Software Eng.*, Vol. SE-14, No. 9, Sep. 1988, pp. 1307-1318.
- [14] Philip S. Yu, Yann-Hang Lee, and Avraham Leff, "Robust Transaction-Routing Strategies in Distributed Database Systems," *Data Engineering*, Vol. 12, No. 1, March 1989, pp. 51-57.
- [15] K. G. Shin, C. M. Krishna and Yann-Hang Lee, "Optimal Dynamic Control of Resources in a Distributed Fault-Tolerant System," *IEEE Trans. on Software Eng.*, Vol. SE-15, No. 10, Oct. 1989, pp. 1188-1198.
- [16] C. M. Krishna and Yann-Hang Lee, "A Study of Two-Phase Service," *Operations Research Letters*, Vol. 9, No. 2, March 1990, pp. 91-97.
- [17] Yann-Hang Lee and C. M. Krishna, "Optimal Scheduling of Signature Analysis for VLSI Testing," *IEEE Trans. on Computers*, Vol. TC-39, No. 3, March 1991, pp. 336-341.
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- [19] Yann-Hang Lee and Philip Yu, "Adaptive Access Plan Selection for Relational Database Systems," *Computer System Science and Engineering*, Vol. 7, No. 1, January 1992, pp. 52-61.
- [20] Jih-Kwon Peir and Yann-Hang Lee, "Look-Ahead Routing Switches for Multistage Interconnection Networks," *Journal of Parallel and Distributed Computing*, Vol. 7, No. 1, January 1993, pp. 52-61.
- [21] Sundeep Prakash, Yann-Hang Lee, and Theodore Johnson, "A Non-Blocking Algorithm for Shared Queues Using Compare-and Swap," *IEEE Trans. on Computers*, Vol. 43, No. 5, May 1994, pp. 548-559.

- [22] Javier Cordova and Yann-Hang Lee, "Multi-cast Trees to Provide Message Ordering in Mesh Networks", *Computer Systems Science and Engineering*, Vol. 11, No. 1, 1996, pp. 3-14.
- [23] Yann-Hang Lee, Randy Chow, and Sandra Cheung, "Circular Window Control Schemes in Fast Packet Switches" *Computer Communications*, Vol. 19, No. 8, pp. 675-684, 1996.
- [24] Kyungshik Lim and Yann-Hang Lee, "Partitioning Heterogeneous Traffic Sources in Mobile Communication Networks," *IEEE Trans. on Computers*, Vol. 46, No. 3, pp. 312-325, 1997.
- [25] Kyungshik Lim and Yann-Hang Lee, "Virtual Cell in Mobile Computer Communications," *Computer Communications*, Vol. 20, No. 7, pp. 586-598, 1997.
- [26] Daeyoung Kim and Yann-Hang Lee, "Periodic and Aperiodic Task Scheduling in Strongly Partitioned Integrated Real-time Systems," *The Computer Journal*, Vol. 45, No. 4, 2002, pp. 395-409.
- [27] Yann-Hang Lee and C. M. Krishna, "Scheduling of Voltage-clock Modes in Fixed Priority Real-time Systems," *Real-time Systems Journal*, May 2003, Vol. 24, Issue 3, pp. 303-317.
- [28] Yan Huang and Yann-Hang Lee, "System and Software Designs for Transaction Processing in Asymmetric Communication Environments," *Software: Practice and Experience (SPE)*, Volume 33, Issue 14, November 2003, pp. 1359-1376.
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- [30] C. M. Krishna and Yann-Hang Lee, "Voltage-Clock-Scaling Adaptive Scheduling Techniques for Low Power in Hard Real-Time Systems," *IEEE Trans. Computers*, Vol. 52, No. 12, pp. 1586-1593, Dec. 2003.
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- [33] Deming Liu, Yann-Hang Lee: An Efficient Scheduling Discipline for Packet Switching Networks Using Earliest Deadline First Round Robin. *Telecommunication Systems* 28(3-4): 453-474, 2005.
- [34] Sudeep Jain and Yann-Hang Lee "A Real-Time Flash Memory File System (RTFFS) for Embedded Applications," *International Journal of Computers and Their Applications*, Vol. 13, No. 3, Sep. 2006, 153-165.
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- [40] Jun Xu, Yann-Hang Lee, Chengcheng Guo, and Jianfeng Yang, "Resource Allocation in City-wide Real-Time Wireless Mesh Networks." *Journal of Networks*, 9(8): 2026-2036, (2014).
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- [2] Kang G. Shin and Yann-Hang Lee, "Analysis of the Impact of Error Detection on Computer Performance," *Proc. of 13th Int'l Conf. on Fault-Tolerant Computing*, June 1983, pp.356-359.
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- [6] Philip S. Yu, Bala R. Iyer, and Yann-Hang Lee, "Transaction Recovery in Distributed DB/DC System: A Progressive Approach," *Proc. of 5th Symp. on Reliability in Distributed Software and Database Systems*, 1986, pp. 207-214.
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- [8] Philip S. Yu, Bala R. Iyer, and Yann-Hang Lee, "Analysis of Recovery Protocols in Distributed On-Line Transaction Processing Systems," *Proc. of Real-Time Systems Symposium*, Dec. 1986, pp. 226-233.
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- [10] Philip S. Yu, C. M. Krishna, and Yann-Hang Lee, "An Adaptive Optimization Model with Applications to Testing," *Proc. of the 2nd Int'l. Workshop on Applied Mathematics and Performance/Reliability Models of Computer/Communication Systems*, Rome, Italy, May 1987, pp. 503-515.
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- [12] Yann-Hang Lee and C. M. Krishna, "Optimal Scheduling of Signature Analysis for VLSI Testing," *International Test Conference*, Sep. 1988, pp. 443-451.

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- [25] Kyungshik Lim and Yann-Hang Lee, "Virtual Cell in Mobile Computer Communications," *Proceedings of the 3rd Int'l. Conf. on Computer Communications and Networks*, 1994.
- [26] Javier Cordova and Yann-Hang Lee, "Multicast Trees to Provide Message Ordering in Mesh Networks," *Proceedings of the 7th Int'l. Conf. on Parallel and Distributed Computer Systems*, 1994, pp. 140-145.
- [27] Kyungshik Lim and Yann-Hang Lee, "Optimal Partitioning of Heterogeneous Traffic Sources in Highway Cellular Systems," *IEEE PIMRC'94*, pp. 1237-1241, Vol. 4.
- [28] Yann-Hang Lee, Randy Chow, and Sandra Cheung, "Circular Window Control Schemes in Fast Packet Switches," *Int'l. Conf. on Computer Communication and Networks*, Sep. 1995. pp. 116-123.
- [29] Kyungshik Lim and Yann-Hang Lee, "Heuristics for Multiway Partitioning in Hexagonal Cellular Systems," *International Conf. on Communications*, May 1995. pp. 1839-1843, Vol. 3.

- [30] Kyungshik Lim and Yann-Hang Lee, "A Performance Analysis of the Virtual Cell System for Mobile Computer Communications," Conference on Information Networking (ICOIN-10), Jan. 1996.
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- [32] Yann-Hang Lee, Daeyoung Kim, Mohamed Younis, and Jeff Zhou, "Partition Scheduling in APEX environment," The Fifth IEEE International Conference on Real-Time Computing Systems and Applications, Japan, Oct. 1998, pp. 103-109.
- [33] Yann-Hang Lee and C. M. Krishna "Voltage-Clock Scaling for Low Energy Consumption in Real-time Embedded Systems," *The Sixth IEEE International Conference on Real-Time Computing Systems and Applications*, Dec. 1999. pp. 272-279
- [34] Yann-Hang Lee, YoungJoon Byun, and Eric Wong, "A Toolset for Testing Real-time Ada Program," *The 3rd IEEE Symposium on Application-Specific Systems and Software Engineering Technology (ASSET2000)*, March 2000. pp. 65-69.
- [35] C. M. Krishna and Yann-Hang Lee, "Voltage-switching scheduling algorithms for low power in hard real-time systems," *IEEE Real-Time Technology and Application Symposium*, May 2000. pp.156-165.
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- [38] Daeyoung Kim, Yann-Hang Lee, and Mohamed F. Younis, "SPIRIT- $\mu$ Kernel for Strongly Partitioned Real-Time Systems," *The Seventh IEEE International Conference on Real-Time Computing Systems and Applications*, Dec. 2000. pp. 73-80.
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- [40] Yan Huang and Yann-Hang Lee, "A Concurrency Control Protocol for Broadcast-based Transaction Processing and its Correctness Proof," *13th International Conference on Parallel and Distributed Computing Systems*, Aug. 2001.
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- [49] Deming Liu and Yann-Hang Lee, "An Efficient Scheduling Discipline for Packet Switching Networks Using Earliest Deadline First Round Robin," *The IEEE 13th International Conference On Computer Communications And Networks*, Oct. 2003.
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- [51] Deming Liu, Yann-Hang Lee, Yoonmee Doh: Parallel Fair Round Robin Scheduling in WDM Packet Switching Networks. *The International Conference on Information Networking (ICOIN)*, 2004: 503-513
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- [53] Ravi Shah, Yann-Hang Lee, and Daeyoung Kim, "Sharing I/O in Strongly Partitioned Real Time Systems", *International Conference on Embedded and Software Systems*, 2004, pp. 502-507.
- [54] Yann-Hang Lee, Amit Deshmukh, Vikram Phadke, Jin Wook Lee, "Key Management in Wireless Sensor Networks," *European Workshop on Security in Ad-Hoc and Sensor Networks (ESAS)*, 2004, pp. 190-204.
- [55] Yann-Hang Lee, Vikram Phadke, Jin Wook Lee, Amit Deshmukh "Secure Localization and Location Verification in Sensor Networks." *International Conference on Mobile Ad-hoc and Sensor Network*, 2005: 278-287.
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- [78] Topi Pulkkinen, Mikko Sallinen, Jiyeon Son, Jun-Hee Park, and Yann-Hang Lee, "Home network semantic modeling and reasoning — A case study," Information Fusion (FUSION), 2012 15th International Conference on , vol., no., pp.338,345, 9-12 July 2012
- [79] Topi Pulkkinen, Young-Sung Son, Joohyung Lee, Yann-Hang Lee, Mikko Sallinen and Jun-Hee Park, "Progressive Monitoring and Treatment Planning of Diabetes Mellitus in Smart Home Environment," International Conference on Consumer Electronics, ICCE 2013.
- [80] Young Wn Song and Yann-Hang Lee, "Efficient Data Race Detection for C/C++ Programs Using Dynamic Granularity," 28th IEEE International Parallel & Distributed Processing Symposium (IPDPS), 2014, pp. 679-688.
- [81] Young Wn Song and Yann-Hang Lee, "Dynamic Analysis of Embedded Software using Execution Replay", 17th IEEE Symposium on Object/Component/Service-oriented Real-time Distributed Computing (ISORC), June 2014, pp. 166-173.
- [82] Young Wn Song and Yann-Hang Lee, "On the Existence of Probe Effect in Multi-threaded Embedded Programs," The ACM International Conference on Embedded Software (EMSOFT), Oct. 2014, pp. 18:1-18:9.
- [83] Tuncali, Cumhur Erkan; Fainekos, Georgios; Lee, Yann-Hang, "Automatic Parallelization of Simulink Models for Multi-core Architectures," 2015 IEEE 17th International Conference on Embedded Software and Systems (ICCESS), 2015, Pages: 964 – 971.

## GOVERNMENT REPORTS

- [1] Yann-Hang Lee, Elliott Rachlin, and Philip A. Scandura, Jr., *Handbook for Ethernet-Based Aviation Databases: Certification and Design Considerations*, DOT/FAA/AR-05/54, Office of Aviation Research and Development, Washington DC., 20591, Nov. 2005.
- [2] Yann-Hang Lee, Elliott Rachlin, and Philip A. Scandura, Jr., *Safety and Certification Approaches for Ethernet-Based Aviation Databases*, DOT/FAA/AR-05/52, Office of Aviation Research and Development, Washington DC., 20591, Dec. 2005.
- [3] Yann-Hang Lee and Jim Krodel, *Flight-Critical Data Integrity Assurance for Ground-Based COTS Components*, DOT/FAA/AR-06/2, Office of Aviation Research and Development, Washington DC., 20591, March 2006.

## BOOK AND JOURNAL EDITING

- [1] Yann-Hang Lee and C. M. Krishna, Special Issue on Real-time Computing, *Proceedings of the IEEE*, Jan. 1994.
- [2] Yann-Hang Lee and C. M. Krishna, *Readings in Real-time Systems*, IEEE Computer Society Press, 1993.
- [3] C. M. Krishna and Yann-Hang Lee, Special Issue on Real-time Computing, *IEEE Computer*, May 1991.
- [4] C. M. Krishna and Yann-Hang Lee, Special Issue on Real-time Computing (Real-Time Systems Revisited: New Approaches & Applications), *Proceedings of the IEEE*, July. 2003.

## RECENT RESEARCH GRANTS

1. "Undergraduate Laboratory Development for Computer Architecture and Real-time Embedded Systems," (PI; with Dr. J. K. Peir), NSF-DUE-ILI-9750516, June 1997 - May 1999, \$59,867.
2. "A System and Software Integration Platform for Real-time Embedded Systems," AlliedSignal AeroSpace, (Principal Investigator), Jan. 1997 - Dec. 1997, \$86,608.
3. "A System and Software Integration Platform for Real-time Embedded Systems," AlliedSignal AeroSpace, (Principal Investigator), Jan. 1998 - Dec. 1998, \$154,454.
4. "Design and Implementation of Robust Micro-controller for Real-time Embedded Systems," US Army Space and Strategic Defense Command, (Principal Investigator; with Randy Chow, Ponas Livadas, and Richard Newman), 1998-2001, \$1,181,000.
5. "Development of Application Execution Environment in Partitioned Systems," AlliedSignal Aerospace, (Principle Investigator), Aug. 1999 – Dec. 1999, \$24,984.
6. "Software Test Analysis for Real-time Ada Programs," NASA Johnson Space Center, (Principle Investigator), March 1999 – Dec. 2000, \$120,000.
7. "Real-time Embedded Software Verification and Validation," NASA Johnson Space Center (Principle Investigator), April 2000 – Sep. 2002, \$390,941.
8. "Optimization and Measurement Experiment of Strongly Partitioned Real-time Kernel," Honeywell International, (Principle Investigator), May 2000 – Aug. 2000, \$12,633.
9. "Information Service and Pervasive Computing in Sensor Networks", Motorola, (Principle Investigator), Aug. 2000-July 2001, \$28,540.
10. "Software Metrics Analysis Tool for Mission-Critical Ada Programs," SERC (Software Engineering Research Center), (Principle Investigator), Feb. 2001 – May 2002, \$24,336.
11. "A Concentration Track in Embedded Systems," NSF, (Co-PI, with Sethuraman Panchanathan, Forouzan Golshani, David Pheanis, Ben Huey, and Gerald Gannod) NSF EIA-0122600, Sep. 2001-Aug. 2004, \$735,321.
12. "A Curriculum and Laboratory Proposal for Real-time Embedded Systems," Embedded Systems Consortium, (Principle Investigator), May 2001 – May 2002. \$45,000.
13. "A Performance Evaluation Framework for Internet and Multimedia Services in Network Processors," Embedded Systems Consortium, (Principle Investigator), May 2001 – May 2002. \$89,347.
14. "Adaptive Performance and Power Management for Real-time Systems," NSF NGS EIA-0102539, (Principle Investigator), Sep. 2001 – Sep. 2004, \$241,939.
15. "Safety and Certification Approaches for Ethernet-based Aviation Databases," FAA DTFA03-01-C-00042, (Principle Investigator, joined with Honeywell International), Sep. 2001 – March. 2004, \$360,000.
16. "Flight Critical Data Integrity Assurance for Ground-based COTS Components," FAA DTFA03-01-C-00047, (Principle Investigator, joined with United Technology Research Center), Sep. 2001 – April 2004, \$362,556.
17. "Testing Embedded Systems and Software," NSF CCLI DUE-0127148, (Co-PI, with Wei-Tek Tsai), Jan. 2002 – Dec. 2003, \$201,425.

18. "Security Tradeoff in NEST," DARPA NEST, Nov. 2002- Dec. 2004, \$167,073, (Teamed with colleagues from University of Massachusetts at Amherst and University of Michigan).
19. "Timing and Race Condition Verification of Real-time Systems," NASA IV&V Center, NAG5-12584, (Principle Investigator, with Eric Wong, Karam Chatha, and Gerald Gannod), Jan. 2003-Jan. 2004, \$125,164.
20. "Dynamic QOS Management for Network-centric Systems," (Co-PI, with Jim Collofello), Boeing, Jan. 2004-Dec. 2004, \$108,662.
21. "A Testing Framework for Reproducible Execution and Race Condition Detection in Real-time Embedded Systems," (PI, with Eric Wong and Jeff Lei), NASA JSC, Jan. 2005 – Dec. 2007. \$585,000.
22. "A Curriculum Development Project on Programming for Computer Engineering," (Co-PI, with Debra Clalliss), Embedded Systems Consortium, Jan. 2006 - Dec. 2006, \$64,647.
23. "Preparing High School Faculty for Teaching Service-Oriented Computing," (Co-PI, with Wei-Tek Tsai, Yinong Chen, Jim Collofello, and Gary Bitter), Department of Education, FIPSE project. \$594,000, Jan. 2007-Dec. 2009.
24. "Testing for Software Safety," (Co-PI, with Eric Wong and Dianxiang Xu), NASA JSC, Jan. 2007 – Dec. 2009. \$360,000.
25. "Process-based Ontology Design for Smart Home Applications," (PI, with Wei-Tek Tsai), ETRI Korea, July 2007-Jan. 2010. \$174,000.
26. "Replay Debugging for Multi-threaded and Multi-core Embedded Systems", NSF IUCRC, Jan. 2010-Dec. 2010, \$32,000.
27. "Home Information Remote Aggregation and Context Inference Prediction Technology Development," ETRI, Oct. 1, 2010 – Sep. 2015. \$365,850.
28. "Replay Debugging for Multi-threaded and Multi-core Embedded Systems", NSF IUCRC, Sep. 2010-Aug. 2012, \$71,304.
29. "Curriculum Development: Intel Atom in Embedded Systems Courses," Intel, May, 2010-May, 2011, \$27,000.
30. "Collaborative Research on Replay Debugging and Risk Analysis-Based Fault-Proneness Identification for Multi-threaded and Multi-core Embedded Systems," NSF CORBI project, Aug. 2010-July 2011, \$36,304.
31. "Parallelization of Embedded Control Applications on Multi-core Architectures: A Case Study," NSF IUCRC, Aug. 2013-July 2015, \$94,231.
32. "Concurrency and Scheduling Analysis of Real-time Embedded Software on Multi-core Processors," NSF IUCRC, Aug. 2013-July 2014, \$28,939.
33. "Curriculum Development: A Visual Programming Approach to Teach IoT in Introduction to Engineering Class," Intel, Oct, 2015-Aug, 2016, \$62,000.

## **PROFESSIONAL ACTIVITIES**

- Member, Program Committee, Sixth International Conference on Distributed Computing Systems, 1986.
- Member, Program Committee, 1986 IEEE Real-time Systems Symposium.
- Member, Program Committee, 1990 and 1991 COMPSAC.

- Co-Chair of the Workshop on Architecture Supports for Real-time Systems, Dec. 1991.
- Member, Program Committee, 1992 IEEE Real-time Systems Symposium.
- Member, Program Committee, 1995 IEEE International Conference on Complex Computer Systems.
- Member, Program Committee, 1995 and 1996 International Conference on Computer Communications and Networks.
- Program Co-Chair, 1995 IEEE Real-time Systems Symposium, Italy, Dec. 1995.
- NSF Panel Review, Nov. 1995.
- General Co-Chair, 1996 IEEE Real-time Systems Symposium, Washington D. C., Dec. 1996.
- Member, Program Committee, 17th IEEE International Conference on Distributed Computing Systems, 1997.
- Member, Program Committee, International Conference on Computer Communications and Networks, 1997.
- Member, Program Committee, IEEE Real-time Systems Symposium, Dec. 1997.
- Session Chair, IEEE Real-time Systems Symposium, Dec. 1997.
- Session Chair, The Fifth IEEE International Conference on Real-time Computing Systems and Applications, Oct. 1998.
- Tutorial Co-Chair, International Conference on Parallel and Distributed Systems, Taiwan, Dec. 1998.
- Member, Program Committee, The 6th and 7th IEEE International Conference on Real-time Computing Systems and Applications, Dec. 1999, 2000, and 2003.
- Program Co-Chair, The Sixth International Symposium on Autonomous Decentralized Systems (ISADS), 2003.
- Member, Program Committee, The 10th IEEE Real-Time and Embedded Technology and Applications Symposium, 2004.
- Member, Program Committee, The International Workshop on Software Support on Portable Storage (IWSSPS) workshop, 2005, 2006, and 2008.
- Member, Program Committee, ACM SAC05 and SAC06, Software Engineering Track,
- Vice Program Chair, The 2<sup>nd</sup> International Conference on Embedded Software and Systems, 2005.
- Member, Steering Committee, 3rd Workshop on Software Technologies for Future Embedded and Ubiquitous Systems, (SEUS 2006).
- Program committee member, the Workshop on Embedded Systems Education (WESE) 2006, 2007, and 2008.
- Program committee member, IEEE International Conference on Services Computing (SCC 2006).
- Program committee member, the 3rd International Workshop on Embedded Computing, IWEC-2006.

- Program committee member, the 2006 International Workshop on Embedded Software Optimization (ESO 2006).
- Member, Advisory and Publicity Committee, the IEEE International Symposium on Object-oriented Real-time Computing ISORC-2006.
- Keynote Speaker, International Conference on Computer Applications in Industry and Engineering, Oct. 2006.
- Co-Program Chair, the 3rd International Conference on Embedded Software and Systems (ICESS), 2007.
- Program committee member, IEEE International Conference on Service-Oriented Computing and Applications (SOCA'07)
- Program committee member, the 4th IEEE International Symposium on Embedded Computing, SEC-07.
- Program committee member, the International Conference on Information Networking (ICOIN) 2007, 2008, and 2009.
- Program Committee member, the International Workshop on Embedded Software Optimization (ESO), 2007 and 2008.
- Keynote Speaker, International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD) July 2007.
- Program Committee member, The IEEE Asia-Pacific Services Computing Conference (APSCC), 2008 and 2009.
- Program Committee member, The 3rd International Symposium on Trustworthiness, Reliability and services in Ubiquitous and Sensor neTworks (TRUST-08).
- Program Committee member, the IEEE International Symposium on Embedded Computing (SEC 2008).
- Program Committee member, International Conference on Embedded Software and Systems (ICESS) 2008 and 2009.
- Panel chair, International Conference on Embedded Software and Systems (ICESS) 2009.
- Program committee member, the Fourth International Conference on Embedded and Multimedia Computing (EM-Com 2009)
- Program committee member, the 3rd International Conference on Management of e-Commerce and e-Government (ICMeCG09).
- Program committee member, the 4th International Workshop on Software Support for Portable Storage (IWSSPS), 2009
- Member, Steering Committee, International Conference on Embedded Software and Systems, 2011.
- Program committee member, the 13th IEEE International Symposium on Object/component/service-oriented Real-time distributed computing (ISORC 2010).
- Program committee member, IEEE International Symposium on Service-Oriented Computing and Applications (SOCA 2010).
- Program Committee member, 2010 Workshop on Embedded Systems Education.

- Program Committee member, International Conference on Embedded Software and Systems (ICESS) 2010.
- Program Committee member, IEEE Asia-Pacific Services Computing Conference, 2010.
- Program Committee member, 2011 Workshop on Embedded Systems Education.
- Program Committee member, International Conference on Embedded Software and Systems (ICESS) 2011.
- Program Committee member, 2011 IEEE/ACM International Conference on Green Computing and Communication (GreenCOM 2011).
- Program Committee member, Program Committee for the 2nd International Conference on Green Computing (IGCC), 2011.
- Program Committee member, International Conference on Pervasive and Embedded Computing and Communication Systems, PECCS 2011.
- Program Committee member, International Conference on Pervasive and Embedded Computing and Communication Systems, PECCS 2012.
- Program Committee member, International Conference on Pervasive and Embedded Computing and Communication Systems, PECCS 2013.
- Program Committee member, 17th IEEE Symposium on Object/Component/Service-oriented Real-time Distributed Computing, ISORC-2014.
- Program Committee member, 12th IEEE International Conference on Embedded Computing, EmbeddedCom 2014.