

ROBERT A. WALKER

Computer Science Department
Kent State University
Kent, OH 44242

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RESEARCH AREAS:

Design of novel architectures for embedded systems, including the use of associative SIMD computing techniques on FPGAs and techniques for improving instruction cache performance
High-level (behavioral) synthesis of digital systems and design space exploration

PROFESSIONAL EDUCATION:

August 1988	Doctor of Philosophy in Electrical and Computer Engineering, Electrical and Computer Engineering Department, Carnegie Mellon University, Pittsburgh, Pennsylvania <i>Design Representation and Behavioral Transformation for Algorithmic Level Integrated Circuit Design</i> (Advisor: Donald E. Thomas)
May 1983	Master of Science in Electrical Engineering (Computer Engineering), Electrical and Computer Engineering Department, Carnegie Mellon University, Pittsburgh, Pennsylvania
June 1981	Bachelor of Science in Electrical Engineering, Magna Cum Laude, Electrical Engineering Department, Tennessee Technological University, Cookeville, Tennessee

MAJOR APPOINTMENTS:

July 2006 – present	Department Chair (4 year term) Computer Science Department, Kent State University, Kent, Ohio
July 2005 – June 2006	Interim Department Chair Computer Science Department, Kent State University, Kent, Ohio
August 2002 – June 2005	Assistant Department Chair Computer Science Department, Kent State University, Kent, Ohio
August 2002 – June 2005 April 1998 – December 2000	OBR Budget Coordinator (coordinator for ~ \$600,000 / year in state funds for enhancing the department's doctoral program) Computer Science Department, Kent State University, Kent, Ohio
May 2000 – April 2003	Graduate Coordinator Computer Science Department, Kent State University, Kent, Ohio
August 2000 – present	Associate Professor with Tenure, Computer Science Department (Mathematics and Computer Science Department until July 2001), Kent State University, Kent, Ohio

August 1997 – August 2000	Associate Professor, Mathematics and Computer Science Department, Kent State University, Kent, Ohio
August 1996 – August 1997	Visiting Associate Professor, Mathematics and Computer Science Department, Kent State University, Kent, Ohio
September 1989 – June 1996	Assistant Professor, Computer Science Department, Rensselaer Polytechnic Institute, Troy, New York
May 1988 – June 1989	Post-Doctoral Associate, Electrical and Computer Engineering Department, Carnegie Mellon University, Pittsburgh, Pennsylvania
August 1981 – April 1988	Graduate Research Assistant, Electrical and Computer Engineering Department, Carnegie Mellon University, Pittsburgh, Pennsylvania

AWARDS AND HONORS:

October 2006	Recognized as a <i>Distinguished Member</i> of the Association for Computing Machinery (ACM)
July 2005	Received the <i>Distinguished Service Award</i> from the Association for Computing Machinery Special Interest Group on Design Automation (ACM / SIGDA) “for dedicated service as SIGDA Chair (2001-2005) and over a decade of service to SIGDA, DAC, and the EDA profession”
June 2001	Received an <i>Award of Appreciation</i> from the Association for Computing Machinery Special Interest Group on Design Automation (ACM / SIGDA) “in appreciation for contributions to ACM SIGDA”
June 1997	Received the <i>Meritorious Service Award</i> from the Association for Computing Machinery Special Interest Group on Design Automation (ACM / SIGDA) “in recognition of outstanding leadership as Secretary / Treasurer and University Booth Coordinator”
March 1994	Recognized as a <i>Senior Member</i> of the Institute of Electrical and Electronics Engineers (IEEE)
June 1992	Awarded a <i>Rensselaer Distinguished Teaching Fellowship</i>
July 1990	Awarded a <i>Lilly Endowment Teaching Fellowship</i>

GRANT ACTIVITY:

(4) Research Grants Funded at KSU (\$512,116 Total Funding)

August 2007	“Wright Center for Sensor Systems Engineering”, PI Robert Walker, Co-PIs Mikhail Nesterenko, Ruoming Jin, Yuri Brietbart, and Hassan Peyravi, received 2-year funding of \$444,959 from Cleveland State University (this grant is a subaward under a larger award from the Ohio Third Frontier Commission to fund a \$73 million Wright Center for Sensor Systems Engineering)
January 2007	“Design of High-speed Content Converting System (HCCS) for Cultural Contents under Ubiquitous Computing Environment”, PI Kenneth Batcher, Co-PI Robert Walker, received 1-year funding of \$10,000 from Contents Technology Institute, Dankook University (Seoul Korea)
June 1998	“A Control Parallel Data Parallel Computer”, PIs Johnnie Baker, Jerry Potter, Robert Walker, and Philip Wilsey (University of Cincinnati), received 2-year funding of \$80,000 from the Ohio Board of Regents Computer Science PhD Enhancement Program) (\$44,797 distributed to KSU and \$34,797 to UC)

December 1997 Received \$12,360 in VLSI hardware and software donations, plus 50 manuals and CDROMs of unknown value, from Altera Corporation

(5) Research Grants Funded at RPI (\$296,000 Total Funding)

June 1995 “Solving the “Extended” Scheduling Problem”, PI Robert Walker, received 3-year funding of \$176,000 from the National Science Foundation under awards MIP-9796085 and MIP-9423953

April 1995 Research Experiences for Undergraduates (REU) Supplement for “Combinational Optimization Algorithms for Scheduling and Module Selection”, PI Robert Walker, received 1-year funding of \$5,000 from the National Science Foundation

July 1992 “Combinational Optimization Algorithms for Scheduling and Module Selection”, PI Robert Walker, received 3-year funding of \$90,000 from the National Science Foundation under award MIP-9211323

August 1991 Received \$20,000 in equipment funds from the ACM SIGDA (Special Interest Group on Design Automation) as University Booth Coordinator for the 1993 Design Automation Conference, matched by \$4,000 from the Computer Science Department at Rensselaer Polytechnic Institute

June 1990 “Improving User Interaction During High-Level Synthesis”, received \$1,000 ACM SIGDA Library Grant as Honorable Mention Scholarship Award

(7) Teaching Grants Funded at RPI (\$118,095 Total Funding)

all proposals listed below with multiple names were written in collaborative fashion and submitted jointly

May 1993 “Computer Science 1: Making Difficult Concepts More Approachable”, received one-year funding of \$9,000 from AT&T (with Professors Spooner, Skolnick and Rodger)

August 1992 “Computer Science 1: Toward the Cutting Edge”, received one-year funding of \$9,000 from AT&T (with Professors Skolnick and Spooner)

August 1992 “Portable Workstation Computers and Display Devices for Use in the Introduction to Computer Science Course”, received equipment funding of \$35,000 from IBM (with Professors Skolnick and Spooner)

June 1992 Rensselaer Distinguished Teaching Fellowship, received release time and summer support valued at \$25,941

September 1990 “Course Development: Computer Science I”, received Macintosh computers valued at \$21,654 from the Apple Academic Development Program (with Professors Skolnick and Spooner)

July 1990 “Course Development: Computer Science I”, received one-year funding of \$11,000 from the Rensselaer Center for Innovation in Undergraduate Education (with Professors Skolnick and Spooner)

July 1990 Lilly Endowment Teaching Fellowship, received one-year funding of \$6,500

(40) PUBLICATIONS:

(2) Books

2. *A Survey of High-Level Synthesis Systems*, Robert A. Walker and Raul Camposano, Kluwer Academic Publishers, Boston, 1991.
 88 citations on Google Scholar on 18 July 2007
1. *Algorithmic and Register-Transfer Level Synthesis: The System Architect’s Workbench*, D.E. Thomas, E.D. Lagnese, R.A. Walker, J.A. Nestor, J.V. Rajan, and R.L. Blackburn, Kluwer Academic Publishers, Boston, 1990.
 108 citations on Google Scholar on 18 July 2007

(9) Journal Articles

9. “Kluwer Academic Publisher Editorial: SIMDs — Back in Style!”, Robert A. Walker, *System Design Frontier*, 3(8):3–6, August 2006.
8. “Efficient Optimal Design Space Characterization Methodologies”, Stephen A. Blythe and Robert A. Walker, *ACM Transactions on Design Automation of Electronic Systems*, 5(3):322–336, July 2000.
<http://doi.acm.org/10.1145/348019.348058>
7 citations on Google Scholar on 18 July 2007
7. “A Solution Methodology for Exact Design Space Exploration in a Three-Dimensional Design Space”, Samit Chaudhuri, Stephen A. Blythe, and Robert A. Walker, *IEEE Transactions on VLSI Systems* 5(1):69–81, March 1997.
http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=555988
13 citations on Google Scholar on 18 July 2007
6. “Computing Lower Bounds on Functional Units Before Scheduling”, Samit Chaudhuri and Robert A. Walker, *IEEE Transactions on VLSI Systems* 4(2):273–279, June 1996.
http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=502199&isnumber=10826
36 citations on Google Scholar on 18 July 2007
5. “High-Level Synthesis: Introduction to the Scheduling Problem”, Robert A. Walker and Samit Chaudhuri, *IEEE Design and Test* 12(2):60–69, Summer 1995.
<http://doi.ieeecomputersociety.org/10.1109/54.386007>
40 citations on Google Scholar on 18 July 2007
4. “The Status of High-Level Synthesis: Guest Editor’s Introduction”, Robert A. Walker, *IEEE Design and Test* 11(4):42–43, Winter 1994.
<http://doi.ieeecomputersociety.org/10.1109/MDT.1994.10024>
3. “Analyzing and Exploiting the Structure of the Constraints in the ILP Approach to the Scheduling Problem”, Samit Chaudhuri, Robert A. Walker, and John E. Mitchell, *IEEE Transactions on VLSI Systems* 2(4):456–471, December 1994.
http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=335014
56 citations on Google Scholar on 18 July 2007
2. “Behavioral Transformation for Algorithmic Level IC Design”, Robert A. Walker and Donald E. Thomas, *IEEE Transactions on Computer-Aided Design* 8(10):1115–1128, October 1989.
http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=39073
60 citations on Google Scholar on 18 July 2007
1. “Automatic Data Path Synthesis”, D.E. Thomas, C.Y. Hitchcock, III, T.J. Kowalski, J.V. Rajan, and R.A. Walker, *IEEE Computer* 16(12):59–70, December 1983.
42 citations on Google Scholar on 18 July 2007

(29) Conference / Workshop Papers

29. “A Prototype Multithreaded Associative SIMD Processor”, Kevin Schaffer and Robert A. Walker, in *Proc. of the 21st International Parallel and Distributed Processing Symposium (Workshop on Advances in Parallel and Distributed Computing Models)*, abstract on page 228, full text on CDROM. Long Beach, California, March 2007.
http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=4228199
28. “Implementing a Multiple-Instruction Stream Associative MASC Processor”, Hong Wang and Robert A. Walker, in *Proc. of the 18th International Conference on Parallel and Distributed Computing and Systems*, pages 460–465. Dallas, Texas, November 2006.
<http://www.actapress.com/PaperInfo.aspx?PaperID=28832>
46% acceptance rate (106 out of 228)
27. “Solving the Longest Common Subsequence (LCS) Problem using the Associative ASC Processor with Reconfigurable 2D Mesh”, Sabegh Singh Viridi, Hong Wang, and Robert A. Walker, in *Proc. of the 18th International Conference on Parallel and Distributed Computing and Systems*, pages 454–459. Dallas, Texas, November 2006.
<http://www.actapress.com/PaperInfo.aspx?PaperID=28831>
46% acceptance rate (106 out of 228)

26. "Interrupt Triggered Software Prefetching for Embedded CPU Instruction Caches", Ken W. Batcher and Robert A. Walker, in *12th Real-Time and Embedded Technology and Applications Symposium*, pp. 91–100. San Jose, California, April 2006.
<http://doi.ieeecomputersociety.org/10.1109/RTAS.2006.24>
30% acceptance rate (38 out of 128)
25. "A Scalable Pipelined Associative SIMD Array with Reconfigurable PE Interconnection Network for Embedded Applications", Hong Wang and Robert A. Walker, in *Proc. of the 17th International Conference on Parallel and Distributed Computing and Systems*, pp. 667-673. Phoenix, Arizona, November 2005.
<http://www.actapress.com/PaperInfo.aspx?PaperID=22375>
24. "Cluster Miss Prediction with Prefetch on Miss for Embedded CPU Instruction Caches", Ken Batcher and Robert A. Walker, in *Proc. of the 7th International Conference on Compilers, Architecture, and Synthesis for Embedded Systems*, pp. 24-34. Washington DC, September 2004.
<http://doi.acm.org/10.1145/1023833.1023839>
30% acceptance rate (31 out of 102)
23. "Efficient Associative SIMD Processing for Non-Tabular Structured Data", Jalpesh K. Chitalia and Robert A. Walker, in *Proc. of the 2nd Northeast Workshop on Circuits and Systems (NEWCAS)*, pp. 265-268. Montreal, Canada, June 2004.
<http://ieeexplore.ieee.org/search/freesrchabstract.jsp?arnumber=1359082&isnumber=29808&punumber=9395&k2dockey=1359082@ieeecnfs&query=1359082%3Cin%3Earnumber&pos=0>
71% acceptance rate (104 out of 147)
22. "A Scalable Associative Processor with Applications in Database and Image Processing", Hong Wang, Lei Xie, Meiduo Wu, and Robert A. Walker, in *Proc. of the 18th International Parallel and Distributed Processing Symposium (Workshop in Massively Parallel Processing)*, abstract on page 259, full text on CDROM. Santa Fe, New Mexico, April 2004.
<http://ieeexplore.ieee.org/search/freesrchabstract.jsp?arnumber=1303327&isnumber=28950&punumber=9132&k2dockey=1303327@ieeecnfs&query=1303327%3Cin%3Earnumber&pos=0>
21. "Cluster Miss Prediction for Instruction Caches in Embedded Networking Applications", Ken Batcher and Robert A. Walker, in *Proc. of the 14th Great Lakes Symposium on VLSI*, pp. 358-363. Boston, Massachusetts, April 2004.
<http://doi.acm.org/10.1145/988952.989039>
41% acceptance rate (96 out of 237)
20. "Implementing A Scalable ASC Processor", Hong Wang and Robert A. Walker, in *Proc. of the 17th International Parallel and Distributed Processing Symposium (Workshop in Massively Parallel Processing)*, abstract on page 267, full text on CDROM. Nice, France, April 2003.
<http://ieeexplore.ieee.org/search/freesrchabstract.jsp?arnumber=1213482&isnumber=27277&punumber=8608&k2dockey=1213482@ieeecnfs&query=1213482%3Cin%3Earnumber&pos=0>
19. "Implementing Associative Search and Responder Resolution", Meiduo Wu, Robert A. Walker, and Jerry Potter, in *Proc. of the 16th International Parallel and Distributed Processing Symposium (Workshop in Massively Parallel Processing)*, abstract on page 246, full text on CDROM. Ft. Lauderdale, Florida, April 2002.
http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=1016666
18. "Implementing Associative Processing: Rethinking Earlier Architectural Decisions", Robert Walker, Jerry Potter, Yanping Wang, and Meiduo Wu, in *Proc. of the 15th International Parallel and Distributed Computing Symposium (Workshop on Massively Parallel Processing)*, abstract on p. 195, full text on accompanying CDROM. San Francisco, California, April 2001.
http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=925207
17. "A Practical One-Semester 'VLSI Design' Course for Computer Science (and Other) Majors", Robert A. Walker, in *Proc. of the ACM Special Interest Group on Computer Science Education Technical Symposium*, pp. 237–241. New Orleans, Louisiana, March 1999.
<http://doi.acm.org/10.1145/384266.299769>
16. "Efficiently Searching the Optimal Design Space", Stephen A. Blythe and Robert A. Walker, in *Proc. of the Ninth Great Lakes Symposium on VLSI*, pp. 192–195. Ypsilanti, Michigan, March 1999.
<http://doi.ieeecomputersociety.org/10.1109/GLSV.1999.757408>

15. "Bounding Algorithms for Design Space Exploration", Samit Chaudhuri and Robert A. Walker, in *Proc. of the Ninth Great Lakes Symposium on VLSI*, pp. 234–235. Ypsilanti, Michigan, March 1999.
<http://doi.ieeecomputersociety.org/10.1109/GLSV.1999.757420>
14. "Flexible Parallel Processing in Memory: Architecture + Programming Model", Nael B. Abu-Ghazaleh, Philip A. Wilsey, Jerry Potter, Robert Walker, and Johnnie Baker, in *Proc. of the Third Petaflop Workshop*. Annapolis, Maryland, February 1999.
<http://citeseer.ist.psu.edu/675433.html>
13. "Toward a Practical Methodology for Completely Characterizing the Optimal Design Space", Stephen A. Blythe and Robert A. Walker, in *Proc. of the 9th International Symposium on System Synthesis*, pages 8-13. La Jolla, California, November 1996.
<http://doi.ieeecomputersociety.org/10.1109/ISSS.1996.565870>
29% acceptance rate (23 out of 80)
14 citations on Google Scholar on 18 July 2007
12. "An Exact Methodology for Scheduling in a 3D Design Space", Samit Chaudhuri, Stephen A. Blythe, and Robert A. Walker, in *Proc. of the 8th International Symposium on System Synthesis*, pages 78-83. Cannes, France, September 1995.
http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=520616
32% acceptance rate (25 out of 79)
27 citations on Google Scholar on 18 July 2007
11. "Computing Lower Bounds on Functional Units Before Scheduling", Samit Chaudhuri and Robert A. Walker, in *Proc. of the 7th International Symposium on High-Level Synthesis*, pages 36-41. Niagara-on-the-Lake, Ontario, May 1994.
http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=302344
39% acceptance rate (26 out of 67)
10. "ILP-Based Scheduling with Time and Resource Constraints in High-Level Synthesis", Samit Chaudhuri and Robert A. Walker, in *Proc. of the Seventh International Conference on VLSI Design*, pages 17-25. Calcutta, India, January 1994.
http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=282637
54% acceptance rate (90 out of 167)
9. "The Structure of Assignment, Precedence, and Resource Constraints in the ILP Approach to the Scheduling Problem", Samit Chaudhuri, Robert A. Walker, and John Mitchell, in *Proc. of the 1993 International Conference on Computer Design*, pages 25-29. Cambridge, Massachusetts, October 1993.
http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=393410
8. "Cluster-Oriented Scheduling in Pipelined Data Path Synthesis", Ching-Tang Chang, Kenneth Rose, and Robert A. Walker, in *Proc. of the 1993 International Conference on Computer Design*, pages 374-378. Cambridge, Massachusetts, October 1993.
http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=393349
7. "High-Level DSP Synthesis Using the COMET Design System", Ching-Tang Chang, Kenneth Rose, and Robert A. Walker, in *Proc. of the 1993 ASIC Conference*, pages 408-411. Rochester, New York, September 1993.
http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=410748
62% acceptance rate
6. "COMET: A Set of Global Transformation Algorithms for High-Level Pipeline Synthesis", Ching-Tang Chang, Kenneth Rose, and Robert A. Walker, in *Proc. of the Int. Symp. on VLSI Tech. Systems and Applications*, pages 49-53. Taipei, Taiwan, May 1993.
http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=263625
5. "Increasing User Interaction During High-Level Synthesis", Robert A. Walker, Shivkumar Ramabadran, Rajive Joshi and Steinar Flatland, in *Proc. of the 24th Annual International Symposium on Microarchitecture*, pages 133-142. Albuquerque, New Mexico, November 1991.
<http://doi.acm.org/10.1145/123465.123493>
43% acceptance rate (26 out of 61)
4 citations on Google Scholar on 18 July 2007
4. "The System Architect's Workbench", D.E. Thomas, E.M. Dirkes, R.A. Walker, J.V. Rajan, J.A. Nestor, and R.L. Blackburn, in *Proc. of the 25th Design Automation Conference*, pages 337-343. Anaheim, California,

June 1988.

<http://portal.acm.org/citation.cfm?id=285785&dl=ACM&coll=portal>

31% acceptance rate (125 out of 400)

75 citations on Google Scholar on 18 July 2007

3. “Design Representation and Transformation in The System Architect’s Workbench”, Robert A. Walker and Donald E. Thomas, in *Proc. of the International Conference on CAD-87*, pages 166-169. Santa Clara, California, November 1987.
39% acceptance rate (171 out of 440)
2. “A Model of Design Representation and Synthesis”, Robert A. Walker and Donald E. Thomas, in *Proc. of the 22nd Design Automation Conference*, pages 453-459. Las Vegas, Nevada, June 1985.
Nominated for the Best Paper Award in the Systems, Languages, and Software Category.
<http://doi.acm.org/10.1145/317825.317928>
27 citations on Google Scholar on 18 July 2007
1. “Behavioral Level Transformation in the CMU-DA System”, Robert A. Walker and Donald E. Thomas, in *Proc. of the 20th Design Automation Conference*, pages 788-789. Miami, Florida, June 1983.
<http://portal.acm.org/citation.cfm?id=800761&dl=ACM&coll=portal>
7 citations on Google Scholar on 18 July 2007

GRADUATE STUDENTS ADVISED:

(1) Current Doctoral Advisees (Pre Candidacy)

Ken Atchinson Computer Science Department, Kent State University,
Design and Implementation of an Associative SIMD Processor for Virus Detection,
Candidacy Exam (dissertation proposal) expected Spring 2008

(2) Current Doctoral Advisees (Past Candidacy)

Kevin Schaffer Computer Science Department, Kent State University,
Design and Implementation of a Multithreaded Associative SIMD Processor,
passed Candidacy Exam (dissertation proposal) April 2006
Defense expected Spring 2008

Kenneth Batcher Computer Science Department, Kent State University,
Cluster Miss Based Enhancement Techniques for Embedded CPI Instruction Caches,
passed Candidacy Exam (dissertation proposal) November 2004
Defense expected Fall 2007

(3) Doctoral Students Advised to Completion

Hong Wang Computer Science Department, Kent State University,
Design and Implementation of an FPGA-Based Scalable Pipelined Associative SIMD Processor Array with Specialized Variations for Sequence Comparison and MSIMD Operation,
defended November 2006 (currently employed by the University of Toledo)

Stephen Blythe Computer Science Department, Rensselaer Polytechnic Institute,
The Exploration of Extended Search Spaces in High-Level Synthesis
defended August 1997 (currently employed by Saint Louis University)

Samit Chaudhuri Electrical, Computer, and Systems Engineering Department, Rensselaer Polytechnic Institute,
Scheduling and Design Space Exploration in High-Level Synthesis,
defended June 1995 (currently employed by Magma Design Automation)

(—) Current Masters Advisees

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(16) Masters Students Advised to Completion

Ping Xu	Computer Science Department, Kent State University, <i>Implementing Three VLDC String-Matching Algorithms on an FPGA-Based Associative SIMD Processor</i> , <u>defended</u> May 2006 (currently in KSU's Nursing program)
Sabegh Singh Virdi	Computer Science Department, Kent State University, <i>Solving the Longest Common Subsequence (LCS) Problem using the Associative ASC Processor with Reconfigurable 2D Mesh</i> , <u>defended</u> March 2006
Jalpesh Chitalia	Computer Science Department, Kent State University, <i>Efficient Representation of Data Structures on Associative Processors</i> , <u>defended</u> September 2004 (currently employed by PayPal)
Lei Xie	Computer Science Department, Kent State University, <i>Implementing a PE Interconnection Network for a FPGA-Based Associative Processor</i> , <u>defended</u> March 2004
Kevin Schaffer	Computer Science Department, Kent State University, <i>Developing a Practical Instruction Set for a RISC-Based Associative Processor</i> , <u>defended</u> April 2003 (now matriculated into Doctoral program)
Meiduo Wu	Computer Science Department, Kent State University, <i>Implementing the Associate Processing Array for an Associate Processor on FPLDs</i> , <u>defended</u> April 2002 (matriculated into Doctoral program, currently on leave of absence)
Yanping Wang	Computer Science Department, Kent State University, <i>Implementing the Single Instruction Stream Associative Computing Model on FPGAs — Architecture, Back-end Compiler, Instruction Stream Control Unit Design and Implementation</i> , <u>defended</u> September 2001 (currently employed by Intel)
Liyang Chen	Mathematics and Computer Science Department, Kent State University, <i>Modeling Broadcast Algorithms Using Different Communication Methods in a Distributed Embedded System</i> , <u>defended</u> January 2001
James Jerkofsky	Mathematics and Computer Science Department, Kent State University, <i>An FPGA Implementation of CORDIC Arithmetic</i> , <u>defended</u> October 2000 (currently employed by Walsh University)
Kun Qiu	Mathematics and Computer Science Department, Kent State University, <i>Communication Channel Modeling and Synthesis in Hardware / Software Codesign</i> , <u>defended</u> September 2000 (currently employed by Nestle)
Theresa Haman	Computer Science Department, Rensselaer Polytechnic Institute, <i>Automation of User Mailing List Requests</i> , <u>defended</u> May 1996
Laura Lenert	Computer Science Department, Rensselaer Polytechnic Institute, <i>Name Server Transaction System</i> , <u>defended</u> May 1994
Jorge Escobar	Computer Science Department, Rensselaer Polytechnic Institute, <i>Graphical User Interface for a Reverse Engineering Tool</i> , <u>defended</u> July 1993
Steinar Flatland	Computer Science Department, Rensselaer Polytechnic Institute, <i>Implementation of Improved User Interaction for High Level Synthesis</i> , <u>defended</u> May 1992
Shivkumar Ramabadran	Electrical, Computer, and Systems Engineering Department, Rensselaer Polytechnic Institute, <i>Metrics for Improving Designer Interaction in High-Level Synthesis</i> , <u>defended</u> May 1991

Rajive Joshi Electrical, Computer, and Systems Engineering Department,
Rensselaer Polytechnic Institute,
A Graphical Interface for Improving Designer Interaction During High-Level Synthesis,
defended January 1991

(4) Bachelors Projects Advised to Completion

Michael Sagert Mathematics and Computer Science Department, Kent State University,
Hardware Support for Remote Procedure Calls,
Honors Thesis defended May 1998

Joy Chik Computer Science Department, Rensselaer Polytechnic Institute,
Improved Methodologies for Design Space Exploration,
Undergraduate Research Project completed December 1995

Albert Jenó Computer Science Department, Rensselaer Polytechnic Institute,
ROSS: Rensselaer Online Survey System,
Undergraduate Research Project completed August 1993

Robert Ellman Computer Science Department, Rensselaer Polytechnic Institute,
Support for a Graphical Interface for a High-Level Synthesis System,
Undergraduate Research Project completed August 1990

(14) COURSES PREPARED:

(9) Courses Prepared at Kent State University

CS 6/8191	Masters / Doctoral Seminar	Spring'07
CS 6/73995	ST: Parallel and Distributed Computing	Fall'99
CS 6/76995	ST: High-Performance Processor Design	Spring'99
CS 6/73995	ST: Distributed Algorithms	Spring'98
CS 6/75995	ST: High-Level Synthesis	Fall'96
CS 6/73201	Advanced Operating Systems	Fall'05, Spring'03, Spring'01, Spring'00, Spring'99, Spring'98, Spring'97
CS 4/5511	Principles of VLSI Design	Spring'06, Fall'04, Fall'03, Spring'02, Spring'00, Spring'98
CS 4/53201	Operating Systems	Fall'07, Fall'06, Fall'02, Fall'01, Fall'00, Fall'98, Fall'97, Spring'97
CS 33003	Computer Organization and Assembly Language	Fall'98, Fall'97

(5) Courses Prepared at Rensselaer Polytechnic Institute

CS 66-6962	High-Level Synthesis	Spring'93, Fall'90
CS 66-4310	Systems Programming	Spring'90
CS 66-2500	Computer Organization	Spring'96
CS 66-2100	Assembler Language Programming	Fall'89
CS 66-1111	Computer Science I	Fall'95, Spring'95, Fall'94, Spring'94, Fall'93, Spring'93, Fall'92, Spring'92, Fall'91, Spring'91, Fall'90

UNIVERSITY SERVICE:

Kent State University

July 2006 – present	Department Chair
July 2005 – June 2006	Interim Department Chair
August 2002 – June 2005	Assistant Department Chair
August 2002 – June 2005	OBR Budget Coordinator
April 1998 – December 2000	OBR Budget Coordinator
January 1998 – June 2005	Member, OBR Budget Committee
August 1996 – June 2005	Member, Qualifying Examination Committee
May 2000 – April 2003	Graduate Coordinator
July 1997 – June 2005	Member, Graduate Studies Committee
January 1998 – June 2005	Member, Curriculum Committee
August 2002 – June 2005	Member, Student Computing Environment Committee
August 2002 – June 2005	Member, Space Committee
July 2001 – June 2005	Member, Faculty Advisory Committee
August 1996 – June 2001	Member, Computer Science Advisory Committee

Rensselaer Polytechnic Institute

September 1990 – November 1990	Member, Computers in Basic Science Committee, School of Science
September 1989 – June 1996	Member of Computer Science Department standing committees, including: Graduate Curriculum Committee, Ph.D. Qualifying Exam Committee, Undergraduate Curriculum Committee, Recruitment Committee, Laboratory Committee, and Colloquia Committee

PROFESIONAL SOCIETY SERVICE:

Association for Computing Machinery (ACM)

The Association for Computing Machinery (ACM) is the premiere professional organization for computer science professionals, with over 80,000 members worldwide. Most computer scientists who join ACM also join one or more of ACM's ~35 Special Interest Groups (SIGs).

The Chairs or Presidents of those ~35 SIGs constitute ACM's SIG Governing Board (SGB), charged with overseeing the SIGs' activities.

August 2006 – present	Past Chair, SIG Governing Board (SGB)
August 2004 – July 2006	Chair, SIG Governing Board (SGB)
September 2003 – March 2004	Chair, SGB Task Force on SIG Allocation Exclusions
March 2003 – September 2003	Member, SGB Task Force on SIG Allocation Formula
September 2002 – September 2003	Member, SGB Task Force on Digital Library Fund Distribution
July 2001 – present	Member, SIG Governing Board (SGB)

Members of the SGB (the SIG Chairs) elect a Chair of the SGB, a 9-person SGB Executive Committee (SGB EC), and 3 SGB Council Representatives.

August 2006 – present	Past Chair, SGB Executive Committee (SGB EC)
August 2004 – July 2006	Chair, SGB Executive Committee (SGB EC)
October 2003 – July 2004	Vice Chair for SIG Development, SGB Executive Committee
August 2002 – September 2003	Large SIG Advisor, SGB Executive Committee
July 2002 – July 2006	Member, SGB Executive Committee (SGB EC)

The Chair of the SGB, along with the 3 SGB Council Representatives, also serve on the 16-person ACM Council, ACM's highest governing authority. Additionally, the Chair of the SGB also serves on the 5-person ACM Executive Committee.

July 2006 – present	Member, ACM Council (as SGB Council Representative)
August 2004 – July 2006	Member, ACM Council and ACM Executive Committee (as SGB Chair)

ACM Special Interest Group on Design Automation (ACM / SIGDA)

Of ACM's 35 SIGs, SIGDA is the third largest in terms of revenue and fund balance, behind only SIGGRAPH and SIGPLAN. ACM / SIGDA sponsors or is in cooperation with 15-20 conferences, symposia, and workshops each year, publishes an electronic newsletter and supports one ACM journal, publishes CDROM proceedings of almost every major conference in electronic design automation, and has numerous programs to support students and new professors.

July 2005 – present	Past Chair, ACM / SIGDA
July 2001 – June 2005	Chairman, ACM / SIGDA
July 1997 – June 2001	SIGDA Newsletter Editor
July 1993 – June 1997	SIGDA Secretary / Treasurer
June 1992 – June 1994	SIGDA / DAC University Booth Coordinator
November 1992 – present	Member, SIGDA Advisory Board

(42) CONFERENCE ADMINISTRATIVE POSITIONS:

(12) Sponsors' Steering / Coordinating Committee Membership

Design Automation Conference DAC'05 [Sponsors' Coordinating Committee Chair], DAC'04, DAC'03, DAC'02	~3000 technical attendees + 7000 trade show participants
Design, Automation, and Test in Europe Conference DATE'08, DATE'07, DATE'06, DATE'05, DATE'04, DATE'03	~1300 technical attendees + 3500 trade show participants
Hardware / Software Codesign Workshop CODES'96 [Sponsors' Steering Committee Chair], CODES'94 [Sponsors' Steering Committee Chair]	~75 attendees

(6) Steering Committee Memberships

International Conference on Hardware / Software Codesign and System Synthesis CODES+ISSS'08, CODES+ISSS'07, CODES+ISSS'06 [Steering Committee Vice-Chair], CODES+ISSS'05 [Steering Committee Vice-Chair], CODES+ISSS'04 [Steering Committee Vice-Chair]	~150 attendees
Workshop on Massively Parallel Processing WMPP'05	~50 attendees

(24) Executive / Organizing Committee Memberships

Design Automation Conference DAC'05, DAC'04, DAC'03, DAC'02	~3000 technical attendees + 7000 trade show participants
International Conference on Computer-Aided Design ICCAD'00, ICCAD'99, ICCAD'98, ICCAD'97, ICCAD'96, ICCAD'95, ICCAD'94	~900 attendees
International Conference on Hardware / Software Codesign and System Synthesis CODES+ISSS'08, CODES+ISSS'07, CODES+ISSS'06, CODES+ISSS'05, CODES+ISSS'04, CODES+ISSS'03	~150 attendees
Workshop on Advances in Parallel and Distributed Computing Models, Special Session on Massively Parallel Processing APDCM'07	~50 attendees
Workshop on Massively Parallel Processing WMPP'04 [Workshop Co-General Chair], WMPP'03 [Workshop Co-General Chair], WMPP'02, WMPP'01	~50 attendees
Midwest Workshop on Parallel Programming MWPP'99	~50 attendees

(71+) CONFERENCE TECHNICAL POSITIONS:

(27) Conference Program Committee Memberships

Design Automation Conference DAC'96	~ 3000 technical attendees + 7000 trade show participants
Northeast Workshop on Circuits and Systems NEWCAS'06, NEWCAS'05, NEWCAS'04, NEWCAS'03	~350 attendees
International Conference on Computer Design ICCD'94	~300 attendees
International Conference on Hardware / Software Codesign and System Synthesis CODES+ISSS'08, CODES+ISSS'07, CODES+ISSS'06, CODES+ISSS'05, CODES+ISSS'04, CODES+ISSS'03	~150 attendees
International Conference on Parallel and Distributed Computing and Systems PDCS'07	~150 attendees
International Symposium on System Synthesis ISSS'02, ISSS'01, ISSS'00, ISSS'99, ISSS'98, ISSS'97, ISSS'96, ISSS'95	~100 attendees
Workshop on Advances in Parallel and Distributed Computing Models, Special Session on Massively Parallel Processing APDCM'07	~50 attendees
Workshop on Massively Parallel Processing WMPP'05, WMPP'04, WMPP'03, WMPP'02, WMPP'01	~50 attendees

plus occasional service as a Program Committee member for conferences that I do not regularly attend

(27) Conference External Reviewer

Design Automation Conference DAC'07, DAC'06, DAC'05, DAC'03, DAC'02, DAC'01, DAC'00, DAC'99, DAC'98, DAC'97, DAC'95, DAC'94, DAC'93, DAC'92, DAC'91, DAC'90, DAC'89, DAC'88, DAC'87, DAC'86, DAC'85, DAC'84	~3000 technical attendees + 7000 exhibitors & trade show attendees
International Symposium on Computer Hardware Description Languages CHDL'89, CHDL'88, CHDL'87, CHDL'86, CHDL'85	~?? attendees

plus occasional service as an external reviewer for conferences that I do not regularly attend

(17) Session / Panel Chair

Design Automation Conference DAC'96, DAC'95, DAC'94, DAC'91	~3000 technical attendees + 7000 trade show participants
International Conference on Computer-Aided Design ICCAD'94	~900 attendees
International Conference on Hardware / Software Codesign and System Synthesis CODES+ISSS'05, CODES+ISSS'04, CODES+ISSS'03	~150 attendees
International Symposium on System Synthesis (formerly HLSW) ISSS'96, ISSS'95	~100 attendees
Workshop on Advances in Parallel and Distributed Computing Models, Special Session on Massively Parallel Processing APDCM'07	~50 attendees
Workshop on Massively Parallel Processing WMPP'05, WMPP'04, WMPP'03, WMPP'02, WMPP'01	~50 attendees
Midwest Workshop on Parallel Programming MWPP'99	~50 attendees

plus occasional service as a Session / Panel chair for conferences that I do not regularly attend

NON-CONFERENCE REVIEWING ACTIVITIES:

(5) Regular Journal Reviewer

ACM Transactions on Design Automation of Electronic Systems (ACM TODAES)
IEEE Transactions on Very-Large Scale Integration (IEEE TVLSI)
IEEE Transactions on Computer-Aided Design (IEEE TCAD)
IEEE Design and Test
IEEE Computer

plus occasional service as a reviewer for other journals on a one-time basis

(8) Book Reviewer

Addison-Wesley Publishing Company, Computer Science Press, W.H. Freeman and Company,
Kluwer Academic Publishers, McGraw-Hill Inc., PWS Kent Publishing Company,
Saunders College Publishing, and John Wiley and Sons

(1) Funding Agency Reviewer

National Science Foundation, Directorate for Computer and Information Science and Engineering (NSF CISE)