

Serdar Taşiran

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Koç University, Dept. of Computer Engineering,
Rumeli Feneri Yolu, Sarıyer,
Istanbul, 34450 Turkey
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EDUCATION

Doctor of Philosophy

December 1998

University of California, Berkeley,

Department of Electrical Engineering and Computer Sciences

Dissertation topic: Compositional and Hierarchical Techniques for the Formal Verification of Real-Time Systems

Primary area: Formal Verification, Logic Synthesis

Minors: Mathematical Logic; Algorithms and Computer Science Theory

Master of Science

May 1995

University of California, Berkeley,

Department of Electrical Engineering and Computer Sciences

Thesis topic: *Language Containment Using Non-deterministic Omega-automata*

Bachelor of Science

June 1991

Bilkent University, Ankara, Turkey

Department of Electrical and Electronics Engineering

Department Valedictorian, University Salutatorian

HONORS AND AWARDS

- 2011 Became one of 19 members of the Association for Computing Machinery (ACM) Europe Council.
- 2010 Received one of 18 Microsoft Research Europe PhD Scholarship awards.
- 2008 Distinguished Young Scientist Award, Turkish Academy of Sciences (TUBA-GEBIP)
- 2004-11 Research gifts from the Software Productivity Tools and Software Reliability Research Groups, Microsoft Research, Redmond
- 2004 The TUBITAK (The Turkish Council for Scientific and Technical Research) Young Investigator (KARIYER) Award in the form of research funding for five years
- 1993-98 Funding for graduate study from the Semiconductor Research Corporation
- 1992 Eugene C. Gee and Mona Fay Gee Scholarship for graduate study at UC Berkeley
- 1991 One of the four NATO Honorary Doctoral Scholars in Electrical Engineering selected by the Scientific and Technical Research Council of Turkey
- 1991 Ranked first in the graduating class of the Department of Electrical and Electronics Engineering at Bilkent University
- 1987 Represented Turkey as a member of a team of six in the 29th International Mathematics Olympiad, Havana, Cuba
- 1987 Ranked first out of approximately one million high school seniors in the National University Entrance Examination in Turkey (OSS)
- 1984 Ranked first out of approximately 150,000 students in the Science High School (Fen Lisesi) entrance examination

RESEARCH INTERESTS

Software engineering: Software reliability, program analysis, foundations of software engineering
Software verification: Validation and bug detection tools and techniques. Concurrent systems: Multi-threaded software, multi-processor hardware. Design automation tools for hardware and software systems: Synthesis, verification, performance analysis and optimization. Information visualization.

PROFESSIONAL EXPERIENCE

College of Engineering, Koç University, Istanbul, Turkey

Jan. 2003-present

Assistant Professor of Computer Engineering.

Principal Investigator at the Center for Advanced Design Technologies.

Please see separate sections on research interests and courses taught.

Microsoft Research

Jan. 2003-present

Visiting Researcher with the Software Productivity Tools, Research in Software Engineering, and Software Reliability Research Groups, Redmond, WA, Microsoft Research, Silicon Valley Center, Mountain View, CA, and Rigorous Software Engineering Group, Bangalore, India. Research and software tool development for the formal verification of concurrent software systems.

Massachusetts Institute of Technology, Research Laboratory of Electronics

Aug. 2005

Visiting Researcher with the Computational Prototyping Group. Research on effects of stochastic variations on hardware and software system performance and yield.

Systems Research Center, Hewlett-Packard Laboratories (formerly Compaq and Digital Equipment Corp.) Palo Alto, CA

Oct. 2000-Jan. 2003

Research Scientist. Research on the verification and design of software and hardware systems. Projects included tool and technique development for the formal specification and verification of the Alpha 21364 multi-processor architecture, software verification, verification of distributed protocols, protocol implementations, and file systems, and information visualization in bioinformatics: Structural comparison of phylogenetic trees.

Sabanci University, Istanbul, Turkey

Jun. 2001

Instructor for summer graduate course titled "Advanced Digital System Design."

Gigascale System Research Center (www.gigascale.org)

Dec. 1998-Oct. 2000

Research Scientist. The GSRC is a fourteen-university and multi-company research consortium aimed at addressing the challenges electronic design is expected to face in the next 8-12 years. Research included the development of a coverage-guided randomized simulation approach for functional validation. Faculty advisor: Prof. Kurt Keutzer, University of California at Berkeley.

University of California, Berkeley, Computer-Aided Design Research Group

Aug. 1992 - Dec. 1998

Graduate Student Researcher. Investigated the synthesis, functional, and timing verification of hardware and software with emphasis on real-time systems. Developed theory, tools, and methodologies for compositional and hierarchical formal verification. Advisor: Prof. Robert K. Brayton

University of California, Berkeley & National Technological University

Jan.- May. 1997

Course consultant for video correspondence course for practicing engineers.

EE 219B: Logic Synthesis of Digital Systems

Bell Laboratories, Lucent Technologies, Murray Hill, NJ

Jun.- Aug. 1995, Jun. 1996

Member of Technical Staff, Level I (Summer Intern)

Developed theory and tool support for the compositional verification of refinement for real-time systems.

Supervisors: Robert P. Kurshan, Rajeev Alur

University of Illinois, Urbana-Champaign, Coordinated Science Laboratories

Aug. 1991 - May 1992

Research Assistant, Optoelectronics and High Speed Devices Group

Research on wavelength-selective optical logic. Advisor: Prof. Hadis Morkoc

PUBLICATIONS

JOURNAL PUBLICATIONS

1. Serdar Tasiran, Shaz Qadeer
Runtime Verification of Concurrency-Specific Correctness Criteria
International Journal on Software Tools for Technology Transfer (STTT)
(Accepted August 2011: DOI 10.1007/s10009-011-0210-1)
2. Serdar Tasiran, M. Erkan Keremoglu, Kivanc Muslu
Location Pairs: A Test Coverage Metric for Shared-Memory Concurrent Programs
Empirical Software Engineering Journal
(Accepted July 2011: DOI 10.1007/s10664-011-9166-8)
3. Tayfun Elmas, Shaz Qadeer, Serdar Tasiran
Goldilocks: A Race- Aware Runtime
Communications of the Association for Computing Machinery (CACM)
Research Highlights Section. November 2010
4. Alp Arslan Bayrakci, Alper Demir, Serdar Tasiran
Fast Monte Carlo Estimation of Timing Yield With Importance Sampling and Transistor-Level Circuit Simulation
IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems
29(9):1328-1341. September 2010.
5. Nesra Yannier, Cagatay Basdogan, Serdar Tasiran, Omer Lutfi Sen
Using Haptics to Convey Cause and Effect Relations in Climate Visualization
IEEE Transactions on Haptics, 1(2): 130-141, July-December 2008
6. Soner Yaldiz, Alper Demir, Serdar Tasiran
Stochastic Modeling and Optimization for Energy Management in Multi-Core Systems: A Video Decoding Case Study
IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems,
27(7): 1264-1277, July 2008
7. S. Tasiran, Y. Yu, B. Batson
Linking Simulation with Formal Verification at a Higher Level
IEEE Design and Test of Computers,
Special Issue on Exploring Synergies for Design Verification, Nov-Dec 2004
8. R. Joshi, L. Lamport, J. Matthews, S. Tasiran, M. Tuttle, and Y. Yu.
Checking Cache Coherence Protocols with TLA+
Journal of Formal Methods in System Design 22(2):125-131, March 2003.
9. T. Munzner, F. Guimbretiere, S. Tasiran, L. Zhang, and Y. Zhou
TreeJuxtaposer: Scalable Tree Comparison using Focus+Context with Guaranteed Visibility
ACM Transactions on Graphics, 22(3):453-462, 2003
10. T.A. Henzinger, S. Qadeer, S. Rajamani, S. Tasiran
An Assume-Guarantee Rule for Checking Simulation
ACM Transactions on Programming Languages and Systems (TOPLAS), January 2002
11. S. Tasiran, K. Keutzer
Coverage Metrics For Functional Validation Of Hardware Designs
IEEE Design and Test of Computers, Vol. 18, No. 4, 2001

12. M. S. Unlu, S. Strite, A.L. Demirel, S. Tasiran, A. Salvador, H. Morkoc
Wavelength Selective Optical Logic and Interconnects
IEEE Journal on Quantum Electronics, Vol. 29, No. 2, 1993
13. M. S. Unlu, A.L. Demirel, S. Strite, S. Tasiran, A. Salvador, and H. Morkoc
Wavelength Demultiplexing Optical Switch
Applied Physics Letters, Vol. 60, No. 15, 1992

REFEREED CONFERENCE PUBLICATIONS

1. Ali Sezgin, Serdar Tasiran, Kivanc Muslu, Shaz Qadeer.
Run-Time Verification of Optimistic Concurrency
Intl. Conference on Runtime Verification (RV 2010) Malta, November 1-4, 2010
2. Ali Sezgin, Serdar Tasiran, Shaz Qadeer.
Tressa: Claiming the Future.
Verified Software: Theories, Tools and Experiments (VSTTE 2010).
Edinburgh, Scotland. August 16-19, 2010
3. Tayfun Elmas, Shaz Qadeer, Ali Sezgin, Ömer Subaşı, Serdar Taşiran.
Simplifying Linearizability Proofs with Reduction and Abstraction
In *Proc. Intl. Conf. on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2010)*. March 20-28, 2010, Paphos, Southern Cyprus.
4. Tayfun Elmas, Shaz Qadeer, Ali Sezgin, Serdar Tasiran
An Annotation Assistant for Interactive Debugging of Programs with Common Synchronization Idioms.
In *Proc. ACM 2009 Workshop on Parallel and Distributed Systems: Testing, Analysis, and Debugging (PADTAD '09)*. Chicago, Illinois, USA, July 19-20, 2009.
5. Tayfun Elmas, Shaz Qadeer, Serdar Tasiran
A Calculus of Atomic Actions
In *Proc. ACM SIGPLAN-SIGACT 2009 Symposium on Principles of Programming Languages (POPL '09)*
Savannah, Georgia, USA, January 21-23, 2009.
6. Soner Yaldiz, Alper Demir, Serdar Tasiran
Stochastic Modeling and Optimization for Energy Management in Multi-Core Systems: A Video Decoding Case Study
IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems,
27(7): 1264-1277, July 2008
7. Nesra Yannier, Cagatay Basdogan, Serdar Tasiran, Omer Lutfi Sen
Using Haptics to Convey Cause and Effect Relations in Climate Visualization
16th Symposium on Haptic Interfaces for Virtual Environments and Teleoperator Systems, March 2008
8. Tayfun Elmas, Shaz Qadeer, Serdar Tasiran
Goldilocks: A Race- and Transaction-Aware Java Runtime
In *Proc. ACM SIGPLAN 2007 Conf. on Programming Language Design and Implementation*,
PLDI '07. June 10-13, 2007. Also in ACM SIGPLAN Notices, Volume 42, Issue 6, June 2007
9. Serdar Tasiran, Tayfun Elmas
Rollback Atomicity
Proc. of the 7th Workshop on Runtime Verification (RV 2007) Vancouver, BC, Canada, March 2007
6th International Conference on Aspect-Oriented Software Development Conference (AOSD 2007)

10. Tayfun Elmas, Shaz Qadeer, Serdar Tasiran
Goldilocks: Efficiently computing the happens-before relation using locksets
Proc. of the Workshop on Formal Approaches to Testing and Runtime Verification (FATES/RV 2006)
Seattle, WA, August 2006
11. Serdar Tasiran, Alper Demir
Smart Monte Carlo for Yield Estimation
Proc. ACM/IEEE Int'l Workshop on Timing Issues in the Specification and Synthesis of Digital Systems
San Jose, CA, February 2006.
12. Alper Demir, Serdar Tasiran,
Stochastic Logical Effort: Designing for Timing Yield on the Back of an Envelope
Proc. ACM/IEEE Int'l Workshop on Timing Issues in the Specification and Synthesis of Digital Systems
San Jose, CA, February 2006
13. S.Yaldiz, A.Demir, S.Tasiran, P.Ienne, Y.Leblicici
Characterizing and Exploiting Task-Load Variability and Correlation for Energy Management in Multi-Core Systems
Proc. IEEE 3rd Workshop on Embedded Systems for Real-Time Multimedia: ESTIMedia 2005
New York Metropolitan Area, US, September 22-23, 2005
14. T. Elmas, S. Tasiran
VyrdMC: Driving Runtime Refinement Checking with Model Checkers
5th Workshop on Runtime Verification (RV'05).
The University of Edinburgh, Scotland, UK. July 12, 2005
15. T. Elmas, S. Tasiran
Kosut zamanlı Yazılım Bileşenleri için Bir Otomatik Doğrulama Çerçevesi: VyrdMC
II. National Software Engineering Symposium.
METU, Ankara, Turkey, September 22-24, 2005.
16. S. Tasiran, T. Elmas, G. Bolukbasi, M. E. Keremoglu
A Novel Test Coverage Metric for Concurrently-Accessed Software Components
5th International Workshop on Formal Approaches to Testing of Software (FATES 2005).
University of Edinburgh, Scotland, UK, July 11, 2005.
17. T. Elmas, S. Tasiran, S. Qadeer
VYRD: VerifYing Concurrent Programs by Runtime Refinement-Violation Detection
ACM SIGPLAN 2005 Conf. on Programming Language Design and Implementation, PLDI '05. June 12-15, 2005.
Also in ACM SIGPLAN Notices, Volume 40, Issue 6, June 2005
18. Serdar Tasiran, Shaz Qadeer
Runtime Refinement Checking of Concurrent Data Structures
Proc. RV'04 - Fourth Workshop on Runtime Verification, April 3, 2004, Barcelona, Spain
The European Joint Conferences on Theory and Practice of Software (ETAPS '04)
19. S. Tasiran, B. Batson, Y. Yu
Using a Formal Specification and a Model Checker to Monitor and Direct Simulation: Verifying the Multiprocessing Hardware of the Alpha 21364 Microprocessor.
Proc. IEEE 40th Design Automation Conference, DAC '03, Anaheim, CA, June 2003.
(Invited talk to International Solid State Circuits Conference, ISSCC 2004, "Highlights of DAC" Session)

20. S. Tasiran, Y. Yu, R. Joshi, B. Batson, S. Kreider
**Using Formal Specifications to Monitor and Guide Simulation:
Verifying the Cache Coherence Engine of the Alpha 21364 Microprocessor**
IEEE Workshop on Microprocessor Test and Verification, MTV '02, Austin, TX, 2002.
21. S. Tasiran, F. Fallah, D. G. Chinnery, S. J. Weber, K. Keutzer
**A Functional Validation Technique: Biased Random Simulation Guided By
Observability-Based Coverage**
*Proc. of the IEEE Intl Conf. on Computer Design: VLSI in Computers & Processors,
ICCD '01, September 2001*
22. S. Tasiran, F. Fallah, D. G. Chinnery, S. J. Weber, K. Keutzer
**Coverage-Directed Generation Of Biased Random Vectors For
Functional Validation Of Sequential Circuits.**
Proc. of the IEEE/ACM Workshop on Logic and Synthesis, IWLS '01, June 2001
23. T.A. Henzinger, S. Qadeer, S. Rajamani, S. Tasiran
An Assume-Guarantee Rule for Checking Simulation
*Proc. of the 2nd Intl. Conf. on Formal Methods in Computer-Aided Design, FMCAD '98,
Lecture Notes in Computer Science 1522, Palo Alto, CA, 1998*
24. S. Tasiran, S. Yovine, R. K. Brayton
**A Timed Automaton-Based Method for Accurate Computation of Circuit Delay
in the Presence of Cross-Talk**
*Proc. of the 2nd Intl. Conf. on Formal Methods in Computer-Aided Design, FMCAD '98,
Springer-Verlag Lecture Notes in Computer Science 1522, Palo Alto, CA, 1998*
25. R. Alur, T.A. Henzinger, F.Y.C. Mang, S. Qadeer, S.K. Rajamani, S. Tasiran
MOCHA: Modularity in Model Checking
*Proc. of the 10th Intl. Conf. on Computer-Aided Verification, CAV '98
Springer-Verlag Lecture Notes in Computer Science 1427, Vancouver, Canada, 1998*
26. S. Tasiran, Y. Kukimoto, R. K. Brayton
Computing Delay with Coupling Using Timed Automata
*Proc. IEEE/ACM Intl. Workshop on Timing Issues in the Specification and Synthesis of Digital
Systems, TAU '97, Austin, TX, 1997.*
27. S. Tasiran, R. K. Brayton
STARI: A Case Study in Compositional and Hierarchical Timing Verification
*Proc. of the 9th Intl. Conf. on Computer-Aided Verification, CAV '97,
Springer-Verlag Lecture Notes in Computer Science 1254, Haifa, Israel, 1997.*
28. S. Tasiran, R. Alur, R. P. Kurshan, R. K. Brayton
Verifying Abstractions of Timed Systems
*Proc. of 7th Intl. Conference on Concurrency Theory, CONCUR '96,
Springer-Verlag Lecture Notes in Computer Science 1119, Pisa, Italy, 1996.*
29. S. Tasiran, R. K. Brayton
On Iterative Verification with Timed Automata
*Proc. of ACM Intl. Workshop on Timing Issues in the Specification and Synthesis of Digital Systems,
TAU '95, Seattle, WA, 1995.*

30. S. Tasiran, R. Hojati, R. K. Brayton
Language Containment Using Non-deterministic Omega-Automata
Proc. of Advanced Research Working Conference on Correct Hardware Design and Verification Methods, CHARME'95,
 Springer-Verlag Lecture Notes in Computer Science 987, Frankfurt, Germany, 1995.
31. A. Aziz, S. Tasiran, R. K. Brayton
BDD Variable Ordering for Interacting Finite State Machines
Proc. of the 31st ACM/IEEE Design Automation Conference, DAC'94, San Diego, CA, 1994.
32. A. Aziz, F. Balarin, S.-T. Cheng, R. Hojati, T. Kam, S. Krishnan, R. Ranjan, T. Shiple, V. Singhal, S. Tasiran, H.-Y. Wang, R. Brayton, A. Sangiovanni-Vincentelli
HSIS: A BDD-Based Environment for Formal Verification
Proc. of the 31st ACM/IEEE Design Automation Conference, DAC'94, San Diego, CA, 1994.
33. A. Aziz, S. Tasiran, R. K. Brayton
A Communication Complexity Based Approach to BDD Variable Ordering for Systems of Interacting Finite State Machines
ACM/IEEE Intl. Workshop on Logic Synthesis, IWLS'93, Tahoe City, CA, 1993

TECHNICAL REPORTS

1. Tayfun Elmas, Semih Okur, Serdar Tasiran
Rethinking Runtime Verification for Hundreds of Cores: Challenges and Opportunities
 EECS Department, University of California, Berkeley, Tech. Rep. UCB/EECS-2011-74, June 2011.
2. Tayfun Elmas, Shaz Qadeer, Serdar Tasiran
A Calculus of Atomic Actions
 Microsoft Research Technical Report, MSR-TR-2008-99, July 18, 2008
3. Serdar Tasiran
A Compositional Method for Verifying Software Transactional Memory Implementations
 Microsoft Research Technical Report, MSR-TR-2008-56, April 10, 2008.
4. Tayfun Elmas, Shaz Qadeer, Serdar Tasiran
Precise race detection and efficient model checking using locksets
 Microsoft Research Technical Report, MSR-TR-2005-118, March 2006.
5. Serdar Tasiran, Andrej Bogdanov, Minwen Ji
Detecting concurrency errors in file systems by runtime refinement checking
 Hewlett-Packard Laboratories, Technical Report, HPL-2004-177, 2004.

INVITED PRESENTATIONS

- Location Pairs: A Test Coverage Metric for Concurrent Programs
 Microsoft Research, Redmond, WA, July 2011
- The Chemistry of Concurrent and Distributed Programming Workshop
 Mysore Park Series. Mysore, India. February 16-19, 2010.
- IFIP WG 2.3: Working Group on Programming Methodology
 Meeting 51, Santa Barbara, CA, USA. January 17-21, 2010
- Dagstuhl Seminar on Runtime Verification, Diagnosis, Planning and Control for Autonomous Systems
 Schloss Dagstuhl, Germany. November 7, 2010
- Reduction, abstraction, and atomicity:
 How much can we prove about concurrent programs using them?
 IFIP WG 2.3: Working Group on Programming Methodology Mtg. 50, Lachen, Switzerland, March 2010

- Verifying Optimistic Concurrency: Prophecy Variables and Backwards Reasoning
Dagstuhl Seminar on the Design and Validation of Concurrent Systems
Schloss Dagstuhl, Germany. September 2, 2009
- Computer-Aided Verification for Multi-Core / Concurrent Programming
Panel at the CAV 2008 Workshop on Exploiting Concurrency Efficiently and Correctly,
Princeton, NJ, July 8, 2008
- Introduction to Software Verification
Preparatory Lecture at Microsoft Research India Summer School on Programming Languages,
Analysis and Verification, Bangalore, India, June 16, 2008
- Verifying Software Transactional Memory Implementations
Microsoft Research, Redmond, WA. August 2007, April 2008.
Microsoft Research, Bangalore, India, June 2008.
- Goldilocks: A Race- and Transaction-Aware Runtime for Java
Dagstuhl Seminar on Runtime Verification
Schloss Dagstuhl, Germany. January 3, 2007
- T. Elmas, S. Tasiran, S. Qadeer
Race-aware Runtimes for Concurrent Software Development and Deployment
Microsoft Research, Redmond, WA. August 2006
- S. Tasiran
Exploring the Space between Model Checking and Testing for Concurrent Software
Microsoft Research, Redmond, WA. June 2005
- S. Tasiran
Runtime Refinement Checking of Concurrent Software
Synopsys Corporation, Portland, OR. September 2004
- S. Tasiran
VYRD: VeriFYing Concurrent Programs by Runtime Refinement-Violation Detection
Microsoft Research, Redmond, WA. August 2004
- S. Tasiran, B. Batson, Y. Yu
Using a Formal Specification and a Model Checker to Monitor and Direct Simulation:
Verifying the Multiprocessing Hardware of the Alpha 21364 Microprocessor.
International Solid State Circuits Conference, ISSCC 2004,
"Highlights of DAC" Session, January 2004, San Francisco, CA
- T. Munzner, V. King, S. Tasiran, L. Zhang, Y. Zhou
Visual Structural Comparison Between Evolutionary Trees.
In *Frontiers of Computer Visualization*, New York Academy of Sciences, New York, NY, 2002,
Hosted by NYC ACM SIGGRAPH
- S. Qadeer, S. Tasiran
Promising Directions in Hardware Design Verification.
Intl. Symposium on Quality Electronic Design, ISQED '02, San Jose, CA, 2002.
- D. Dill, S. Tasiran
Simulation Meets Formal Verification.
Embedded tutorial in *the IEEE Intl Conf. on Computer-Aided Design, ICCAD 1999*, San Jose, CA, 1999
- S. Tasiran
Coverage Metrics in Hardware Design Verification.
Cadence Berkeley Laboratories, Berkeley, CA,
Tensilica Inc., Santa Clara, CA, and Synopsys, Inc. Marlboro, MA and Mountain View, CA

PROFESSIONAL ACTIVITIES

- Guest Editor, Special Issue of the Journal of Logic and Computation (Oxford Journals) on Runtime Verification
- Organizer and Program Committee Co-chair for the International Workshop on Runtime Verification 2007
- Member of the Technical Program Committees for
 - TACAS 2012: Tools and Algorithms for the Construction and Analysis of Systems
 - UYMS 2011: Ulusal Yazılım Muhendisligi Sempozyumu
 - VSTTE 2010: Verified Software: Theories, Tools and Experiments
 - TRANSACT 2009: 4th ACM SIGPLAN Workshop on Transactional Computing
 - CAV 2009, CAV 2011: Intl. Conference on Computer-Aided Verification
 - ICCD 2008-2010: IEEE Intl. Conference on Computer Design
 - ICTAC 2008, 2009: Intl. Colloquium on the Theoretical Aspects of Computing
 - SAVBCS 2008: Workshop on Specification and Verification of Component-Based Systems
 - YKGS 2008-2011: Yazılım Kalitesi ve Yazılım Gelistirme Araçları Sempozyumu
 - HVC 2005-2008: IBM Verification Conference, Haifa, Israel
 - RV 2005-2008, 2010: International Workshop/Conference on Runtime Verification
 - FATES/RV 2006: Workshop on Formal Approaches to Testing and Runtime Verification
 - PADTAD 2006-2010: Workshop on Parallel and Distributed Systems: Testing and Debugging
- Referee/reviewer for:
 - Intl. Conference on Computer-Aided Design, ICCAD
 - Intl. Conference on Computer-Aided Verification, CAV
 - IEEE Transactions on Computer-Aided Design, TransCAD
 - Journal of the Association for Computing Machinery, JACM
 - Intl. Conference on Formal Methods in Computer-Aided Design, FMCAD
 - ACM/IEEE Intl. Workshop on Timing Issues in the Specification and Synthesis of Digital Systems
 - International Workshop on Logic Synthesis, IWLS
 - International Conference on Computer Design, ICCD
 - IEEE Design and Test of Computers
 - The 21st International Symposium on Computer and Information Sciences, ISCIS '06

Member of the ACM, IEEE

ACADEMIC COMMITTEES

- Graduate programs coordinator for the Computer Engineering Department (Spring 2006 - Fall 2007)
- Member of
 - the committee to improve exam rankings of incoming freshmen (Fall 2009)
 - the core curriculum committee (Fall 2006)
 - the graduate writing committee (2005-2006)
 - the English across the curriculum committee (starting Fall 2006)
 - the Computer Engineering Doctoral Qualifying Examination Committee (since Fall 2005)

GRADUATE STUDENT SUPERVISION

- PhD theses supervised at Koc University:
 - Tayfun Elmas (degree awarded August 2010)
Thesis title: "Techniques for Runtime Monitoring and Static Verification of Concurrent Software"
 - Alp Arslan Bayrakci (degree awarded August 2010)
Thesis title: "Fast And Accurate Statistical Timing Analysis Of Digital Circuits For Timing Yield Estimation Based On Transistor Level Simulations"

- Master's theses supervised at Koc University:
 - Tayfun Elmas (degree awarded Fall 2005)
Thesis title: "Runtime Checking of Refinement for Concurrent Software Components"
 - Soner Yaldiz (degree awarded Fall 2006)
Thesis title: "Stochastic Application Models for Multiprocessor Energy Minimization"
 - M. Erkan Keremoglu (degree awarded Fall 2007)
Thesis title: "The Location-Pairs Coverage Metric for Testing Concurrent Programs"
 - Nesra Yannier (degree awarded Fall 2007)
Thesis title: "Using Haptics to Convey Cause and Effect Relations in Climate Visualization"

COURSES TAUGHT

Graduate courses:

- COMP 489/589: Software Reliability: Specification, Testing and Verification
- COMP 456/556: Algorithms and Computational Complexity
- ECOE 560: Design Methodologies and Tools for Software/Hardware Systems

Undergraduate courses:

- Comp 131/241: Object-Oriented Programming with Java
- Comp 302: Software Engineering
- Engr 100: Introduction to Computer Engineering