

CEMAL YILMAZ

Associate Professor
Faculty of Engineering and Natural Sciences
Sabanci University
Orhanli, Tuzla, Istanbul, 34956, TURKEY

Phone: +90 (216) 483 9532
Fax: +90 (216) 483 9550
Email: cyilmaz@sabanciuniv.edu

RESEARCH INTERESTS

My primary research area is software engineering. My broad research interest is on programmer productivity. I develop practical techniques and tools to help programmers create cheaper, better, faster, and more reliable software systems. In particular, my research interests include, but not limited to: combinatorial interaction testing, fault isolation, localization, and prediction, software security, and software performance debugging and optimization.

EDUCATION

Ph.D. in Computer Science University of Maryland, College Park, MD, USA	Dec. 2005
M.S. in Computer Science University of Maryland, College Park, MD, USA	May 2002
B.S. in Computer Engineering and Information Science Bilkent University, Ankara, Turkey	June 1997

WORK EXPERIENCE

Associate + Assistant Professor Faculty of Engineering and Natural Sciences, Sabanci University, Istanbul, TURKEY	Sept. 2008 - present
Post Doctoral Researcher IBM T. J. Watson Research Center, Hawthorne, NY	Oct. 2005 - July 2008
Software Engineer Lockheed Martin Global Telecommunications, Clarksville, MD	June 2001 - Jan. 2002
Summer Researcher NEC USA, San Jose, CA	May 2000 - Aug. 2000

TEACHING EXPERIENCE

Associate + Assistant Professor Sabanci University, Istanbul, Turkey	Sept. 2008 - present
CS 201 Introduction to Computing	
CS 300 Data Structures	
CS 308 Software Engineering	
CS 439/539 Software Verification & Validation	
CS 560 Automated Debugging	
CS 551/552 Graduate Seminars I/II	
CS 680 Selected Topics in Computer Science I	

PUBLICATIONS

JOURNAL AND MAGAZINE PUBLICATIONS

1. Hanefi Mercan, Cemal Yilmaz, and Kamer Kaya, “CHiP: A Configurable Hybrid Parallel Covering Array Constructor,” accepted for publication, *IEEE Transactions on Software Engineering*, May 11, 2018.
2. Ugur Koc and Cemal Yilmaz, “Approaches for Computing Test-Case-Aware Covering Arrays,” accepted for publication, *Journal of Software: Testing, Verification and Reliability*, July 31, 2018.
3. Yusuf Kulah, Berkay Dincer, Cemal Yilmaz, and Erkey Savas, “SpyDetector: An Approach for Detecting Side-Channel Attacks at Runtime,” *International Journal of Information Security*, 18(4): 393-422, Aug 2019.
4. Ali Can Atici, Cemal Yilmaz, and Erkey Savas “Cache-timing attacks without a profiling phase,” *Turkish Journal of Electrical Engineering and Computer Sciences*, 26(4): 1953-1966, 2018.
5. Gulsen Demiroz and Cemal Yilmaz, “Using simulated annealing for computing cost-aware covering arrays,” *Applied Soft Computing*, 49: 1129–1144, December, 2016.
6. Marco Chiappetta, Erkey Savas, and Cemal Yilmaz, “Real time detection of cache-based side-channel attacks using hardware performance counters,” *Applied Soft Computing*, 49:1162–1174, December, 2016.
7. Burcu Ozcelik and Cemal Yilmaz, “Seer: A Lightweight Online Failure Prediction Approach,” *IEEE Transactions on Software Engineering*, 42(1): 26-46, Jan 2016.
8. Erkey Savas and Cemal Yilmaz, “A Generic Method for the Analysis of a Class of Cache Attacks: A Case Study for AES,” *The Computer Journal*, 58(10): 2716-2737, September 2015.
9. Husnu Yenigun, Cemal Yilmaz, and Andreas Ulrich, “Advances in Test Generation for Testing Software and Systems: An introduction to selected papers from ICTSS 2013,” *International Journal on Software Tools for Technology Transfer*, 18(3): 245-249, June 2016.
10. Cemal Yilmaz, Sandro Fouche, Myra B. Cohen, Adam Porter, Gulsen Demiroz, and Ugur Koc, “Moving Forward with Combinatorial Interaction Testing”, *IEEE Computer magazine*, 47(2): 37-45, Feb 2014.
11. Cemal Yilmaz, Emine Dumlu, Myra B. Cohen, Adam Porter, “Reducing Masking Effects in Combinatorial Interaction Testing: A Feedback Driven Adaptive Approach,” *IEEE Transactions on Software Engineering*, 40(1): 43-66, Jan 2014.
12. Cemal Yilmaz, “Test Case-Aware Combinatorial Interaction Testing,” *IEEE Transactions on Software Engineering*, 39(5): 684-706, May 2013.
13. Martin Brain, Esra Erdem, Katsumi Inoue, Johannes Oetsch, Jorg Puhner, Hans Tompits, Cemal Yilmaz, “Event-Sequence Testing Using Answer-Set Programming,” *International Journal on Advances in Software*, 5(3-4):237-251, 2012.
14. Cemal Yilmaz, Adam A. Porter, Arvind S. Krishna, Atif M. Memon, Douglas C. Schmidt, A. S. Gokhale, B. Natarajan, “Reliable Effects Screening: A Distributed Continuous Quality Assurance Process for Monitoring Performance Degradation in Evolving Software Systems,” *IEEE Transactions on Software Engineering* 33(2): 124-141, 2007.
15. Adam Porter, Cemal Yilmaz, Atif Memon, Douglas C. Schmidt, Bala Natarajan, “Skoll: A Process and Infrastructure for Distributed Continuous Quality Assurance,” *IEEE Transactions on Software Engineering* 33(8): 510-525, Aug. 2007.
16. Cemal Yilmaz, Myra Cohen, Adam Porter, “Covering Arrays for Efficient Fault Characterization in Complex Configuration Spaces,” *IEEE Transactions on Software Engineering* 32(1): 20-34, Jan. 2006.
17. Adam Porter, Cemal Yilmaz, Atif M. Memon, Arvind S. Krishna, Douglas C. Schmidt, A. S. Gokhale, “Techniques and processes for improving the quality and performance of open-source software,” *Software Process: Improvement and Practice Journal* 11(2): 163-176, 2006.
18. Arvind S. Krishna, Cemal Yilmaz, Atif Memon, Adam Porter, Douglas C. Schmidt, Aniruddha Gokhale, Balachandran Natarajan, “Distributed Continuous Quality Assurance Process for Evaluating QoS of Performance-Intensive Software,” *Studia Informatica Universalis* 4(1), 53-72, 2005.
19. Cemal Yilmaz, Atif Memon, Adam Porter, Arvind S. Krishna, Douglas C. Schmidt, Aniruddha Gokhale, and Balachandran Natarajan, “Preserving Distributed System’s Critical Properties—A Model-Driven Approach,” *IEEE Software Special Issue on the Persistent Software Attributes* 21(6), 32-40, 2004.

CONFERENCE AND WORKSHOP PUBLICATIONS

20. Hanefi Mercan, Cemal Yilmaz, and Kamer Kaya, "CHiP: A Configurable Hybrid Parallel Covering Array Constructor," accepted for a J1C2 presentation, *The 26th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE'18)*, Florida, USA, Nov 4-9, 2018.
21. Hanefi Mercan, Kamer Kaya and Cemal Yilmaz, "Enumerator: An Efficient Approach for Enumerating all Valid t-tuples," *International Workshop on Combinatorial Testing (IWCT'18)*, pp. 302-305, Vasteras, Sweden, April 13, 2018.
22. Ethem Utku Aktas, Haluk Altunel, Halil Ibrahim Elalmis, Songul Nisanci, and Cemal Yilmaz, "Endustriyel Baglamda Yazilim Olay Kaydi Yonetim Surecinin Iyilestirilmesi," *12. Ulusal Yazilim Muhendisligi Sempozyumu (UYMS'18)*, Istanbul, Turkiye, 10-12 Eylul, 2018.
23. Burcu Ozcelik and Cemal Yilmaz, "Seer: A Lightweight Online Failure Prediction Approach," *IEEE Computer Software and Applications Conference (J1C2)*, pp. 624-625, Torino, Italy, July 4-8, 2017.
24. M. C. Calpur, S. Arca, T. C. Calpur, and C. Yilmaz, "Model Dressing for Automated Exploratory Testing," *2017 IEEE International Conference on Software Quality, Reliability and Security Companion (QRS-C'17)*, pp. 577-578, Prague, Czech Republic, July 25-29, 2017.
25. H. Mercan, C. Yilmaz, and K. Kaya, "An Approach for Choosing the Best Covering Array Constructor to Use," *2017 IEEE International Conference on Software Quality, Reliability and Security Companion (QRS-C'17)*, volume 1, pp. 77-84, Prague, Czech Republic, July 25-29, 2017.
26. Mustafa Kemal Tas, Hanefi Mercan, Gulsen Demiroz, Kamer Kaya, and Cemal Yilmaz, "Generating Cost-Aware Covering Arrays For Free," *4th International Conference on Tools and Methods of Program Analysis (TMPA'17)*, pp. 170-182, Moscow, Russia, March 3-4, 2017.
27. Mehmet Calpur, Sevgi Arca, Tansu Calpur and Cemal Yilmaz, "Makine Ogrenmesi ile Mobil Uygulama Siniflandırılması ve Otomatik Kesif Testi," *11. Ulusal Yazilim Muhendisligi Sempozyumu (UYMS'17)*, pp. 357-367, Alanya, Turkiye, 18-20 Ekim, 2017.
28. Ethem Utku Aktas, Aziz Goktepe, Gamze Pehlivan, Umit Ulkem Yildirim, and Cemal Yilmaz, "Olay Kayitları Urun ve Platform Kodu Tespit Sureci Otomasyonu," *11. Ulusal Yazilim Muhendisligi Sempozyumu (UYMS'17)*, pp. 432-443, Alanya, Turkiye, 18-20 Ekim, 2017.
29. M. Yunus Donmez, Ozlem Demir, Erdinc Ozkan, Eren Samaner, Omer Mert Candan, Beste Seymen, and Cemal Yilmaz, "Metin Tabanlı Test Durumlarının Kullanacağı Yazilim Modullerinin Tahmin Edilmesi," *11. Ulusal Yazilim Muhendisligi Sempozyumu (UYMS'17)*, pp. 321-331, Alanya, Turkiye, 18-20 Ekim, 2017.
30. Gulsen Demiroz and Cemal Yilmaz, "Yazilim Test Maliyet Fonksiyonlarının Otomatik Olarak Kesfedilmesi," *10. Ulusal Yazilim Muhendisligi Sempozyumu (UYMS'16)*, pp. 454-465, Canakkale, 24-26 Ekim 2016.
31. Hanefi Mercan and Cemal Yilmaz, "Birlesik Kombinezon Etkilesim Sinama Yontemi," *10. Ulusal Yazilim Muhendisligi Sempozyumu (UYMS'16)*, pp. 712-723, Canakkale, 24-26 Ekim, 2016.
32. Hanefi Mercan and Cemal Yilmaz, "A Constraint Solving Problem Towards Unified Combinatorial Interaction Testing," *International Workshop on Constraints in Software Testing, Verification and Analysis (CSTVA'16)*, pp. page 24-30, Saarbruecken, Germany, July 17, 2016.
33. Gulsen Demiroz and Cemal Yilmaz, "Towards Automatic Cost Model Discovery for Combinatorial Interaction Testing," *International Workshop on Combinatorial Testing (IWCT'16)*, pp. 46-50, Chicago, IL, April 10, 2016.
34. S. Rabiger, A. Giriskan, and C. Yilmaz, "How to Provide Developers Only with Relevant Information?" *International Workshop on Empirical Software Engineering in Practice (IWESEP'16)*, pp. 12-17, Osaka, Japan, March 13, 2016.
35. Mehmet Cagri Calpur and Cemal Yilmaz, "Towards Having a Cloud of Mobile Devices Specialized for Software Testing," *International Conference on Mobile Software Engineering and Systems (MOBILESoft'16)*, pp. 9-10, Austin, TX, May 16-17, 2016.
36. Arsalan Javeed and Cemal Yilmaz, "Combinatorial Interaction Testing of Tangled Configuration Options," *International Workshop on Combinatorial Testing, IEEE Eighth International Conference on Software Testing, Verification and Validation Workshops*, pp. 1-4, Graz, Austria, April 13, 2015.
37. Gulsen Demiroz, "Cost-aware combinatorial interaction testing," *International Symposium on Software Testing and Analysis (ISSTA'15)*, pp. 440-443, 2015 (doctoral symposium).
38. Cemal Yilmaz, Gulsen Demiroz, Arsalan Javeed, Hanefi Mercan, Ozgun Ozusta, "Making Combinatorial Interaction Testing Practical," *2015 TestIstanbul Conference*, Istanbul, Turkey, March 27, 2015 (poster).

39. Hanefi Mercan and Cemal Yilmaz, "Pinpointing Failure Inducing Event Orderings," *International Workshop on Program Debugging*, IEEE International Symposium on Software Reliability Engineering Workshops, pp. 232-237, Naples, Italy, Nov 3, 2014.
40. Rahim Dehkharghani and Cemal Yilmaz, "Automatically Identifying a Software Product's Quality Attributes through Sentiment Analysis of Tweets," *International Workshop on Natural Language Analysis in Software Engineering*, pp. 25-30, San Francisco, CA, May 25, 2013.
41. Ali Can Atici, Cemal Yilmaz, and ErKay Savas, "An Approach for Isolating the Sources of Information Leakage Exploited in Cache-Based Side-Channel Attacks," in *the Proceedings of the 2013 IEEE International Conference on Software Security and Reliability-Companion*, pp. 74-83, Gaithersburg, MD, June 18-20, 2013.
42. Cemal Yilmaz, "Combining Hardware and Software Instrumentation for Fault Detection and Failure Prediction," Report from Dagstuhl Seminar 13061 in *Dagstuhl Reports*, 3(2): 8, 2013 (inclusion in seminar reports).
43. Ugur Koc and Cemal Yilmaz, "Augmenting Simulated Annealing for Test Case-Aware Covering Array Construction," *Computer Science Student Workshop (CSW '13)*, Istanbul, Turkey, April 9, 2013 (poster).
44. Cemal Yilmaz, "Combinatorial Interaction Testing," Report from Dagstuhl Seminar 13091 in *Dagstuhl Reports*, 3(2): 168, 2013 (inclusion in seminar reports).
45. ErKay Savas and Cemal Yilmaz, "Cache Attacks: An Information and Complexity Theoretic Approach," in *the 2012 Proceedings of International Conference on New Technologies, Mobility and Security*, pp. 1-7, Istanbul, Turkey, May 7-10, 2012.
46. Gulsen Demiroz and Cemal Yilmaz, "Cost-Aware Combinatorial Interaction Testing," in *the 2012 Proceedings of International Conference on Advances in System Testing and Validation Lifecycle*, pp. 9-16, Lisbon, Portugal, Nov 18-23, 2012.
47. Ugur Koc, Gulsen Demiroz, and Cemal Yilmaz, "Event-Based Relative Debugging," *Computer Science Student Workshop (CSW '12)*, Istanbul, Turkey, April 28, 2012.
48. Esra Erdem, Katsumi Inoue, Johannes Oetsch, Jörg Pührer, Hans Tomptis, and Cemal Yilmaz, "Answer-set programming as a new approach to event-sequence testing," *Proceedings of International Conference on Advances in System Testing and Validation Lifecycle (VALID '11)*, pp. 25-34, Barcelona, Spain, October 23-29, 2011.
49. Emine Dumlu, Cemal Yilmaz, Myra B. Cohen, and Adam Porter, "Feedback driven adaptive combinatorial testing," in *the Proceedings of the 2011 International Symposium on Software Testing and Analysis (ISSTA '11)*, pp. 243-253, ACM, New York, NY, USA, 2011.
50. Cemal Yilmaz and Adam Porter, "Combining hardware and software instrumentation to classify program executions," in *the Proceedings of the eighteenth ACM SIGSOFT International Symposium on Foundations of Software Engineering (FSE '10)*, pp. 67-76, ACM, New York, NY, USA, 2010.
51. Cemal Yilmaz, "Using hardware performance counters for fault localization," in *the 2010 Proceedings of International Conference on Advances in System Testing and Validation Lifecycle (VALID '10)*, pp. 87-92, Nice, France, Aug 22-27, 2010.
52. Burcu Ozcelik, Kubra Kalkan, and Cemal Yilmaz. "An approach for classifying program failures," in *the 2010 Proceedings of International Conference on Advances in System Testing and Validation Lifecycle (VALID '10)*, pp. 93-98, Nice, France, Aug 22-27, 2010.
53. Cemal Yilmaz, Emine Dumlu, and Adam Porter, "Program yürütmelerini sınıflandırmak için donanım ve yazılım ölçüm aygıtlarını birleştirme," in *the Proceedings of 2010 Yazılım Kalitesi ve Yazılım Geliştirme Araçları Sempozyumu*, pp. 279-286, İKÜ and HHO, Istanbul, Turkey, December 3-4, 2010 (National).
54. Cemal Yilmaz, Amit Paradkar, and Clay Williams, "Time Will Tell: Fault Localization Using Time Spectra," in *the Proceedings of the 30th International Conference on Software Engineering (ICSE '08)*, pp. 81-90, Leipzig, Germany, May 10 - 18, 2008.
55. Matthew Kaplan, Tim Klinger, Amit M. Paradkar, Avik Sinha, Clay Williams, Cemal Yilmaz, "Less is More: A Minimalistic Approach to UML Model-Based Conformance Test Generation," in *the Proceedings of the International Conference on Software Testing (ICST '08)*, Verification, and Validation, pp. 82-91, Lillehammer, Norway, April 9-11, 2008.
56. Cemal Yilmaz and Clay Williams, "An Automated Model-Based Debugging Approach," in *the Proceedings of the International Conference on Automated Software Engineering (ASE '07)*, pp. 174-183, Atlanta, Georgia, November 5-9, 2007.
57. Matthew Kaplan, Tracy Kimbrel, Kevin Mckenzie, Richard Prewitt, Maxim Sviridenko, Clay Williams and Cemal Yilmaz, "Test Machine Scheduling and Optimization for z/OS," in *the Proceedings of the IEEE Symposium on Computational Intelligence in Scheduling (CISched '07)*, pp. 27-34, Honolulu, Hawaii, April 1-5, 2007.

58. Cemal Yilmaz and Clay Williams, “Automated Model-Based Debugging,” *IBM Conference on Software Engineering For Tomorrow (SWEFT)*, Hawthorne, NY, October 16, 2006 (poster).
59. Cemal Yilmaz, Arvind S. Krishna, Atif Memon, Adam Porter, Douglas C. Schmidt, Aniruddha Gokhale, and Balachandran Natarajan, “Main Effects Screening: A Distributed Continuous Quality Assurance Process for Monitoring Performance Degradation in Evolving Software Systems,” *In the Proceedings of the 27th International Conference on Software Engineering (ICSE '05)*, pp. 293-302, St. Louis, Missouri, 15-21 May, 2005.
60. Cemal Yilmaz, Cagatay Catal, Oya Kalipsiz and Adam Porter, “Dağıtık Kalite Güvencesi,” *In the Proceedings of Ulusal Yazılım Mühendisliği Sempozyumu (UYMS '05)*, pp. 189-198, Ankara, Turkey, September 22-24, 2005 (National).
61. Cemal Yilmaz and Adam Porter, “Distributed Continuous Quality Assurance,” *TECH 2005*, University of Maryland, Nov 2005 (poster).
62. Cemal Yilmaz, Myra Cohen, and Adam Porter, “Covering Arrays for Efficient Fault Characterization in Complex Configuration Spaces,” *In the Proceedings of the International Symposium on Software Testing and Analysis (ISSTA '04)*, pp. 45-54, Boston, Massachusetts, July 11-14, 2004.
63. Atif Memon, Adam Porter, Cemal Yilmaz, Adithya Nagarajan, Douglas C. Schmidt, and Bala Natarajan, “Skoll: Distributed Continuous Quality Assurance,” *In the Proceedings of the 26th International Conference on Software Engineering (ICSE '04)*, pp. 459-468, Edinburgh, Scotland, UK, May 23-28, 2004.
64. Cemal Yilmaz, Arvind S. Krishna, Atif Memon, Adam Porter, Douglas C. Schmidt, Aniruddha Gokhale, and Balachandran Natarajan, “A Model-based Distributed Continuous Quality Assurance Process to Enhance the Quality of Service of Evolving Performance-intensive Software Systems,” *In the Proceedings of the Workshop on Remote Analysis and Measurement of Software Systems (RAMSS '04)*, *International Conference on Software Engineering Workshops*, Edinburgh, Scotland, UK, May 24, 2004.
65. Emre Turkyay, Arvind S. Krishna, Aniruddha Gokhale, Douglas Schmidt, Bala Natarajan, Adam Porter, Cemal Yilmaz, Atif Memon, “Model-Driven Quality Assurance Techniques for Distributed Real-time and Embedded Systems,” *In the Proceedings of the OMG Real-Time and Embedded Systems Workshop*, Reston, VA, July 12-15, 2004.
66. Adam Porter, Atif Memon, and Cemal Yilmaz, Don Hinton, Arvind Krishna, and Douglas C. Schmidt, “Distributed Continuous Quality Assurance for Distributed and Real-time Systems,” *In the Proceedings of the 4th Annual Workshop on TAO and CIAO*, Alexandria, VA, July 16, 2004.
67. Cemal Yilmaz, Adam Porter, and Douglas C. Schmidt, “Distributed Continuous Quality Assurance: The Skoll Project”, *In the Proceedings of Workshop on Remote Analysis and Measurement of Software Systems (RAMSS '03)*, *International Conference on Software Engineering Workshops*, Portland, Oregon, May 9, 2003.
68. Frantisek Brabec, Hanan Samet, Cemal Yilmaz, “VASCO: visualizing and animating spatial constructs and operations,” *In the Proceedings of the 19th Symposium on Computational Geometry*, pp. 374-375, San Diego, CA, June 8-10, 2003.
69. W. Li, S. Candan, W. Hsiung, O. Po, D. Agrawal, Q. Luo, W. Huang, Y. Akca, Cemal Yilmaz, “Cache Portal: Technology for Accelerating Database-driven e-commerce Web Sites,” *In the Proceedings of the 27th International Conference on Very Large Data Bases (VLDB '01)*, pp. 699-700, Roma, Italy, September 11-14, 2001 (short paper).
70. W. Li, S. Candan, W. Hsiung, D. Agrawal, Q. Luo, W. Huang, Y. Akca, Cemal Yilmaz, “Web Acceleration for Electronic Commerce Applications,” *International World Wide Web Conference (WWW '10)*, Hong Kong, May 1-5, 2001 (poster).

BOOK CHAPTERS

71. Husnu Yenigun, Cemal Yilmaz, and Andreas Ulrich (Eds), “Testing Software and Systems - 25th IFIP WG 6.1 International Conference - ICTSS 2013,” *Lecture Notes in Computer Science 8254*, Springer, 2013.
72. Avik Sinha and Cemal Yilmaz, “Software Metrics,” *Wiley Encyclopedia of Computer Science and Engineering*, March 2009.

PATENTS

73. Erdinc Ozkan, Ozlem Demir, Mehmet Yunus Donmez, Cemal Yilmaz, “Metin Tabanlı Test Durumlarının Kullanacağı Yazılım Modüllerinin Tahmin Edilmesi,” *filed by Netas*, 2017/15969, October 17, 2017.

74. Mehmet Cagri Calpur and Cemal Yilmaz, "Interleaving Coverage Criteria Oriented Testing of Multi-Threaded Applications," Sabanci University, filed in 2013.
75. Al Chakra, David M. Ogle, Patrick J. O'Sullivan, Clay E. Williams, and Cemal Yilmaz, "Constraint programming for reduction of system test-configuration-matrix complexity," US Patent No: 7890803, International Business Machines Corporation (IBM), Feb. 2011 (issued).
76. Cemal Yilmaz and Clay E. Williams, "Problem determination via model-based debugging," US Patent No: 7647528, International Business Machines Corporation (IBM), Jan. 2010 (issued).

THESES

77. Cemal Yilmaz, "Distributed Continuous Quality Assurance," PhD Thesis, University of Maryland, College Park, 2005.
78. Cemal Yilmaz, "A Large Vocabulary Speech Recognition System for Turkish," M.S. Thesis, Bilkent University, Ankara, Turkey, 1999.

GRANTS

1. **Principal Investigator**, Unified Combinatorial Interaction Testing, 118E204, 30 months, 15.10.2018 - 15.04.2021, (in progress).
2. **Principal Investigator**, Cost- and Test Case-Aware Combinatorial Interaction Testing, 113E546, 30 months, 01.04.2014 - 01.10.2016, (successfully completed).
3. **Researcher**, TUBITAK 1001, Using Hardware Performance Counters for Software Security Testing, 110E037, 24 months, 01.04.2011 - 01.02.2013, (successfully completed).
4. **Principal Investigator**, TUBITAK 3501, Using Hardware Performance Counters for Failure Prediction, 109E182, 36 months, 01.06.2010 - 01.06.2013, (successfully completed).
5. **Principal Investigator**, Marie Curie International Reintegration Grant within the 7th European Community Framework Programme, Using Hardware Performance Counters for Functional Correctness Debugging, PIRG04-GA-2008-239484/FP7-PEOPLE-IRG-2008, 36 months, 01.11.2009 - 31.10.2012, (successfully completed).

THESIS SUPERVISION

1. Ethem Utku Aktas, Ph.D., in progress.
2. Arsalan Javeed, Ph.D., in progress.
3. Hanefi Mercan, Ph.D., in progress.
4. Mehmet Cagri Calpur, Ph.D., in progress.
5. Ali Can Atici, Ph.D., in progress (co-advisor).
6. Gulsum Uzer, M.S., in progress.
7. Gulsen Demiroz, Ph.D., Cost-Aware Combinatorial Interaction, Testing, Aug. 2017.
8. Marco Chiappetta, M.S., Realtime Detection of Cache-Based Side-Channel Attacks Using Hardware Performance Counters (co-advisor), Dec., 2016.
9. Hanefi Mercan, M.S., GPU-Based Parallel Computing Methods for Constructing Covering Arrays, Aug. 2015.
10. Yusuf Kulah, M.S., Lightweight Online Approaches for Detecting Cache-Based Side Channel Attacks, Jan. 2015.
11. Arsalan Javeed, M.S., Gray-Box Combinatorial Interaction Testing, Jan. 2015.
12. Ugur Koc, M.S., Using Simulated Annealing for Computing Test Case-Aware Covering Arrays, Jan. 2014.
13. Burcu Ozcelik, M.S., Lightweight Runtime Failure Prediction, Feb. 2012.
14. Mehmet Cagri Calpur, M.S., Interleaving Coverage Criteria Oriented Testing of Multithreaded Applications, Feb. 2012.
15. Emine Dumlu, M.S., Feedback Driven Adaptive Combinatorial Interaction Testing, July 2011.

INVITED TALKS

1. 3rd Workshop on Dependability at IZTECH, “A Lightweight Online Failure Prediction Approach”, Izmir, Turkey, May 8, 2017.
2. 9th National Symposium of Software Engineering, Kombinezon Etkileşim Test Yöntemleri, Izmir, Turkey, Sep 11, 2015.
3. Brownbag Session at SAP, Combinatorial Interaction Testing, Istanbul, Turkey, Feb 4, 2015.
4. 1st International Workshop on Advanced Topics in Software Engineering, Combinatorial Interaction Testing, Istanbul, Turkey, Nov 7, 2014.
5. Dagstuhl Seminar 13091, Combinatorial Interaction Testing, Dagstuhl, Germany, Feb 24-March 1, 2013.
6. Dagstuhl Seminar 13061, Combining Hardware and Software Instrumentation for Fault Detection and Failure Prediction, Dagstuhl, Germany, Feb 3-8, 2013.
7. Kultur University, Combinatorial Interaction Testing, Istanbul, Turkey, April 2012.
8. Koc University, Combining Hardware and Software Instrumentation, Istanbul, Turkey, May 2010.
9. Sabanci University, Distributed Continuous Quality Assurance, Istanbul, Turkey, October 2007.
10. Bogazici University, Distributed Continuous Quality Assurance, Istanbul, Turkey, October 2007.
11. Microsoft Research, Distributed Continuous Quality Assurance, Istanbul, Seattle, WA, May 2005.
12. Motorola Research, Distributed Continuous Quality Assurance, Istanbul, Chicago, IL, May 2005.
13. IBM T. J. Watson Research Center, Distributed Continuous Quality Assurance, Istanbul, Hawthorne, NY, May 2005.

SELECTED TECHNICAL PRESENTATIONS

14. ISSTA '11, Toronto, Canada, July 2011.
15. ICSE '08, Leipzig, Germany, May 2008.
16. ASE '07, Atlanta, Georgia, November 2007.
17. ICSE '05, St. Louis, MO, May 2005.
18. ISSTA '04, Boston, MA, July 2004.
19. ICSE '04, Edinburgh, Scotland, May 2004.

PROFESSIONAL ACTIVITIES

Program Committee Member, ICSE '20, Seoul, South Korea, 2020.
Program Committee Member, SOFTENG '19, Valencia, Spain, 2019.
Program Committee Member, SAC '19, Limassol, Cyprus, 2019.
Program Committee Member, QRS '19, Sofia, Bulgaria, 2019.
Program Committee Member, EASE '19, Copenhagen, Denmark, 2019.
Program Committee Member, UYMS '19, Izmir, Turkey, 2019.
Program Committee Member, ICSE '19, Montreal, Canada, 2019.
Program Committee Member, MVV '18, Lisbon, Portugal, 2019.
Editorial Board Member, Turkish Journal of Electrical Engineering & Computer Sciences, since June 27, 2018.
Co-Organizer, UYMS'18, Istanbul, Turkey, 2018.
Reviewer, IEEE Transactions on Software Engineering, 2018.
Reviewer, IEEE Transactions on Software Engineering, 2017.
Reviewer, IEEE Transactions on Reliability, 2017.
Reviewer, Applied Soft Computing, 2017.
Reviewer, Security and Communication Networks, 2017.
Program Committee Member, CTA '17, Prague, Czech Republic, 2017.
Program Committee Member, SAC '17, Marrakesh, Morocco, 2017.
Program Committee Member, SOFTENG '17, Venice, Italy, 2017.
Program Committee Member, UBMK '17, Antalya, Turkey, 2017.
Program Committee Member, UYMS '17, Alanya, Turkey, 2017.
Program Committee Member, YTM-UYMS '17, Alanya, Turkey, 2017.
Program Committee Member, VALID '17, Athens, Greece, 2017.
Program Committee Member, ISCIS '16, Krakow, Poland, 2016.
Program Committee Member, MVV '16, Vienna, Austria, 2016.
Program Committee Member, UYMS '16, Canakkale, Turkey, 2016.
Program Committee Member, YTM-UYMS '16, Canakkale, Turkey, 2016.
Program Committee Member, VALID '16, Rome, Italy, 2016.
Program Committee Member, SAC-SVT '16, Pisa, Italy, 2016.
Reviewer, IEEE Transactions on Software Engineering, 2016.
Reviewer, Software Testing, Verification and Reliability, 2016.
Reviewer, IEEE Transactions on Computers, 2016.
Reviewer, Applied Soft Computing, 2016.
Reviewer, IEEE Transactions on Software Engineering, 2015.
Reviewer, ACM Transactions on Software Engineering and Methodology, 2015.
Reviewer, Software Testing, Verification and Reliability, 2015.
Reviewer, Turkish Journal of Electrical Engineering & Computer Sciences, 2015.
Program Committee Member, ICTSS '15, Dubai, United Arab Emirates, 2015.
Program Committee Member, VALID '15, Barcelona, Spain, 2015.
Program Committee Member, ISCIS '15, London, UK, 2015.
Program Committee Member, MVV '15, Vancouver, Canada, 2015.
Program Committee Member, SOFTENG '15, Barcelona, Spain, 2015.
Program Committee Member, UYMS '15, Izmir, Turkey, 2015.
Special Section Guest Editor, International Journal on Software Tools for Technology Transfer, Springer, 2014.
Reviewer, ACM Transactions on Software Engineering and Methodology, 2014.
Reviewer, IEEE Transactions on Software Engineering, 2014.
Program Committee Member, ICTSS '14, Madrid, Spain, 2014.
Program Committee Member, VALID '14, Nice, France, 2014.
Program Committee Member, Regression '14, Cleveland, Ohio, 2014.
Reviewer, Journal of Mathematical Problems in Engineering, 2014.
Steering Committee Member, ICTSS, 2013-present.
Chair, ICTSS '13, Istanbul, Turkey, 2013.
Program Committee Member, ISSRE '13, Pasadena, CA, 2013.
Program Committee Member, ISCIS '13, Paris, France, 2013.
Program Committee Member, VALID '13, Venice, Italy, 2013.

PROFESSIONAL ACTIVITIES (cont...)

Program Committee Member, UYMS '13, Izmir, Turkey, 2013.
Reviewer, IEEE Computer Magazine, 2013.
Reviewer, ACM Transactions on Software Engineering and Methodology, 2013.
Program Committee Member, MVV '12, Washington, D.C., 2012.
Program Committee Member, VALID '12, Lisbon, Portugal, 2012.
Program Committee Member, ISCIS '12, Paris, France, 2012.
Program Committee Member, UYMS '12, Ankara, Turkey, 2012.
Reviewer, IEEE Transactions on Software Engineering, 2012.
Reviewer, EMOBD, 2012.
Reviewer, ELECO '12, Bursa, Turkey, 2012.
Program Committee Member, VALID '11, Barcelona, Spain, 2011.
Program Committee Member, ISCIS '11, London, UK, 2011.
Program Committee Member, UYMS '11, Ankara, Turkey, 2011.
Reviewer, Turkish Journal of Electrical Engineering and Computer Sciences, 2011.
Program Committee Member, VALID '10, Nice, France, 2010.
Reviewer, IEEE Transactions on Software Engineering, 2009.
Program Committee Member, UYMS '09, Istanbul, Turkey, 2009.
Program Committee Member, ISCIS '08, Istanbul, Turkey, 2008.
Reviewer, Haifa Verification Conference, Haifa, Israel, 2007.
Program Committee Member, ISSRE '06, Raleigh, North Carolina, 2006.
Reviewer, ICCES '06, Cairo, Egypt, 2006.