Dr. Sanem Arslan Yılmaz

Asst. Prof., Marmara University

Contact Information	Department of Computer Engineering Marmara University, Faculty of Engineering Goztepe Campus, 34722 Kadıkoy, ISTANBUL, TURKEY
	E-mail: sanem.arslan@marmara.edu.tr
	$Website:\ http://mimoza.marmara.edu.tr/~sanem.arslan$
Citizenship	TURKEY
Education	Boğaziçi University, İstanbul, Turkey
	Ph.D., Computer Engineering, GPA: 3.80/4.00, 2011 - 2017
	• Thesis Title: Performance and Cost Efficient Reliability Framework for Multicon Architectures
	 Advisor: Professor Oğuz TOSUN Co-Advisor: Professor Haluk TOPÇUOĞLU
	Boğaziçi University, İstanbul, Turkey
	M.S., Computer Engineering, GPA: 3.50/4.00, 2009 - 2011
	 Thesis Title: Scheduling of Multiple Multithreaded Applications on Chip Mult processors Advisor: Professor Oğug TOSUN
	 Advisor: Professor Oguz 105000 Co-Advisor: Professor Haluk TOPÇUOĞLU
	Marmara University, İstanbul, Turkey
	B.S., Computer Engineering, GPA: 3.56/4.00, 2004 - 2009
	• Advisor: Professor Haluk TOPÇUOĞLU
Research Interests	My research interests are computer architecture, chip multiprocessors, fault tolerance reliability, high performance computing, and parallel programming. My main researce focuses on improving the reliability of parallel applications for multicore architecture under the power and performance constraints.
Research Projects	ELASTIK - A Cross-Layer Reliability Optimization Framework for Manycore Architectures, TUBITAK – 1001 Project 113E530
	Researcher 2013 - 201
	Application Scheduling and Optimization for Chip Multiprocessor (CMP) Architectures TUBITAK – Evrena Project 108E035
	Researcher 2010 - 201

Determining Cancerous Tissues Using Morphological Algorithms, IBM Türkiye

Researcher

June 2008 - June 2009

Studied in a project called "Determining cancerous tissues using Morphological Algorithms" implemented into a cluster of two Playstation3s which contain CELL BE microprocessor.

EXPERIENCE Barcelona Supercomputing Center, Barcelona, Spain

 Post-doctoral Researcher, Computer Architecture for Parallel Paradigms Research

 Group.
 November 2019 - October 2020

Marmara University, Department of Computer Engineering

Assistant Professor

January 2021 to Present

Courses Thaught

- CSE 1142: Computer Programming II
 - Spring 2021
 - Responsible for teaching and organization of the course which is based on Java and C programming languages.
- CSE 4034: Advanced Unix Programming
 - Spring 2021
 - Responsible for teaching of the course which is based on Unix Systems Programming.

Marmara University, Department of Computer Engineering

Teaching Assistant

December 2009 to January 2021

Courses Thaught

- CSE 1141: Computer Programming I
 - Fall 2017, 2018, 2020
 - Responsible for teaching and organization of the course which is based on Java programming language.
- CSE 1142: Computer Programming II
 - Spring 2018, 2019, Fall 2020
 - Responsible for teaching and organization of the course which is based on Java and C programming languages.

Courses Assisted

- CSE 333: Operating Systems
 - Fall 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017
 - Responsible for LAB sessions and projects which are programming assignments to be developed on Bash Shell and C programming language.
- CSE 338: Computer Organization
 - Spring 2014, 2015, 2016, 2017, 2018
 - Responsible for problem sessions and projects which are programming assignments to be developed on SPIM and ModelSim simulators.

- CSE 4048: Introduction to Machine Learning
 - Fall 2018
 - Responsible for homework and project evaluation of the course.
- CSE 246: Analysis of Algorithms
 - Spring 2012
 - Responsible for homework evaluation of the course.
- CSE 459: Internet Programming
 - Spring 2010, Spring 2011
 - Responsible for programming assignments to be developed on Java programming language.
- CSE 474: Computer Networks Spring 2011
 - Spring 2011
 - Responsible for homework evaluation and programming assignments to be developed on Java programming language.
- CSE 364: Formal Languages and Automata Theory
 - Spring 2010
 - Responsible for homework evaluation of the course.
- CSE 498: Engineering Project II
 - Spring 2010
 - Responsible for seminar organization of senior-level course.

JOURNAL PUBLICATIONS

Sanem Arslan, Osman Unsal.

Efficient Selective Replication of Critical Code Regions for SDC Mitigation Leveraging Redundant Multithreading, *Journal of Supercomputing (Science Citation Index Expanded)*, 2021, doi:https://doi.org/10.1007/s11227-021-03804-6.

Isil Oz, Sanem Arslan.

Predicting the Soft Error Vulnerability of Parallel Applications Using Machine Learning, International Journal of Parallel Programming (Science Citation Index Expanded), volume 49, pages 410–439 (2021), doi:https://doi.org/10.1007/s10766-021-00707-0.

Sanem Arslan, Haluk Rahmi Topcuoglu, Mahmut Taylan Kandemir, Oguz Tosun. Scheduling Opportunities for Asymmetrically Reliable Caches, Journal of Parallel and Distributed Computing (Science Citation Index), Vol. 126, pp. 134-151, 2019. doi:https://doi.org/10.1016/j.jpdc.2019.01.005

Isil Oz, Sanem Arslan.

A Survey on Multithreading Alternatives for Soft Error Fault Tolerance, ACM Computing Surveys (CSUR) (Science Citation Index), 52, 2, Article 27 (March 2019), 38 pages. doi:https://doi.org/10.1145/3302255

- Sanem Arslan, Haluk Rahmi Topcuoglu, Mahmut Taylan Kandemir, Oguz Tosun. A selective protection scheme of applications using asymmetrically reliable caches, Journal of Systems Architecture (Science Citation Index Expanded), Vol. 75, pp. 133-144, 2017. doi:http://dx.doi.org/10.1016/j.sysarc.2016.12.004
- Sanem Arslan, Haluk Rahmi Topcuoglu, Mahmut Taylan Kandemir, Oguz Tosun. Asymmetrically reliable caches for multicore architectures under performance and energy constraints, *Cluster Computing (2016)*, 19: 1819 (Science Citation Index Expanded), doi:10.1007/s10586-016-0641-2

Conference Publications	Işıl Öz, Sanem Arslan. Predicting the Soft Error Vulnerability of Parallel Applications Using Machine Learn- ing, Workshop on Artificial Intelligence and Computer Architecture (WAICA) co- located with HiPEAC, Bologna, 2020.
	Zuhal Ozturk, Haluk Rahmi Topcuoglu, Sanem Arslan , Mahmut Taylan Kandemir Soft Error Characterization on Scientific Applications, 16th IEEE International Con- ference on Dependable, Autonomic and Secure Computing (DASC), Athens, 2018.
	Muhammad Aditya Sasongko, Haluk Rahmi Topcuoglu, Sanem Arslan, Mahmut Taylan Kandemir Compiler-Enhanced Reliability for Network-on-Chip Architectures, 25th Euromicro International Conference on Parallel, Distributed and Network-based Processing (PDP), St. Petersburg, 2017.
	Sanem Arslan, Haluk Rahmi Topcuoglu, Mahmut Taylan Kandemir, Oguz Tosun. Protecting Code Regions on Asymmetrically Reliable Caches, Architecture of Com- puting Systems – ARCS, Nuremberg, Germany, April 4-7, 2016.
	Sanem Arslan, Haluk Rahmi Topcuoglu, Mahmut Taylan Kandemir, Oguz Tosun. Performance and Energy Efficient Asymmetrically Reliable Caches for Multicore Ar- chitectures, <i>IPDPS Workshops</i> , Hyderabad, India, 2015.
Poster Sessions	Sanem Arslan, Haluk Rahmi Topcuoglu, Mahmut Taylan Kandemir, Oguz Tosun. Performance and Cost Efficient Asymmetrically Reliable Caches (Poster), Thirteenth International Summer School on Advanced Computer Architecture and Compilation for High-Performance and Embedded Systems (ACACES), 9-15 July 2017, Fiuggi, Italy.
TECHNICAL SKILLS	3
	• Programming languages: C, Java, Python, Matlab, Verilog
	• Parallel programming: Pthreads, OpenMP, MPI, Intel Thread Building Block (TBB)
	• Simulation/instrumentation: Simics full system simulator, gem5 full system simulator, Simple Scalar, Cacti, McPAT, SPIM, ModelSim
Honors &	
Awards	2219 TUBITAK - Post-doctoral Researcher Scholarship
	2211 TUBITAK - PhD Scholarship
	HiPEAC Student Grant for Thirteenth International Summer School on Advanced Computer Architecture and Compilation for High-Performance and Embedded Sys- tems (ACACES 2017)
	TCPP Student Travel Assistance Grant for IPDPS 2015
	2009 Graduation with 3rd rank in B.S.
Professional	
ACTIVITIES	• Reviewer in IEEE Transactions on Parallel and Distributed Systems (Science Citation Index Expanded).
	• Reviewer in Journal of Supercomputing (Science Citation Index Expanded).
	• Reviewer in Future Generation Computer Systems (Science Citation Index Expanded)

- Reviewer in Cluster Computing The Journal of Networks, Software Tools and Applications (Science Citation Index Expanded).
- Program Committee, Workshop on Artificial Intelligence and Computer Architecture (WAICA) co-located with HiPEAC, Bologna, 2020.
- Program Committee, Computer Science Student Workshop (CSW), Istanbul, 2011.
- IEEE membership
- HiPEAC membership

OTHER ACADEMIC ACTIVITIES

- Attendee of the Virtual Heidelberg Laureate Forum 2020, September 2020, online.
- Attendee of the 30th International Conference on Field-Programmable Logic and Applications (FPL2020), August 2020, online.
- Attendee of the Sixteenth International Summer School on Advanced Computer Architecture and Compilation for High-Performance and Embedded Systems organized by HiPEAC (ACACES'20), July 2020, online.
- Attendee of the 50th IEEE/IFIP International Conference on Dependable Systems and Networks (DSN 2020), June 2020, online.
- Attendee of the High Performance and Embedded Architecture and Compilation (HiPEAC 2020) 20-22 January 2020, Bologna, Italy.
- Attendee of the Thirteenth International Summer School on Advanced Computer Architecture and Compilation for High-Performance and Embedded Systems organized by HiPEAC (ACACES'17) 9-15 July 2017, Fiuggi, Italy.
- Attendee of the 29th GI/ITG International Conference on Architecture of Computing Systems (ARCS'16), 04-07 April 2016, Nuremberg, Germany.
- Attendee of the 29th IEEE International Parallel & Distributed Processing Symposium (IPDPS'15), May 25-29, 2015, Hyderabad, INDIA.
- Attendee of the 20th International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS'15), March 14-18, 2015, Istanbul, Turkey.
- Attendee of the 21st IFIP/IEEE International Conference on Very Large Scale Integration (VLSI-SoC'13), Oct 06-09 2013 Istanbul, Turkey.

Last update: July 9, 2021