

Dr. Öğr. Üyesi GÜLAY YALÇIN ALKAN

Kişisel Bilgiler

E-posta: gulay.yalcin@agu.edu.tr

Web: <https://avesis.agu.edu.tr/gulay.yalcin>

Uluslararası Araştırmacı ID'leri

ORCID: 0000-0003-3929-8126

Yoksis Araştırmacı ID: 241935

Eğitim Bilgileri

Doktora, Universidad Politecnica de Cataluna, Computer Architecture , İspanya 2007 - 2014

Yüksek Lisans, Tobb Ekonomi Ve Teknoloji Üniversitesi, Mühendislik Fakültesi, Bilgisayar Mühendisliği, Türkiye 2006 - 2007

Lisans, Hacettepe Üniversitesi, Mühendislik Fakültesi, Türkiye 1998 - 2003

Yabancı Diller

İspanyolca, B1 Orta

İngilizce, C1 İleri

Yaptığı Tezler

Doktora, Designs for Increasing Reliability While Reducing Energy and Increasing Lifetime, Universidad Politecnica De Cataluna, Computer Architecture , Computer Architecture, 2014

Yüksek Lisans, Mikroişlemcilerde etiket karşılaştırıcılarının kullanılmasıyla geçici hataların tespiti , Tobb Ekonomi Ve Teknoloji Üniversitesi, Mühendislik Fakültesi, Bilgisayar Mhendisliği, 2007

Araştırma Alanları

Bilgisayar Bilimleri, Donanım, İşlemci Mimarisi , Mühendislik ve Teknoloji

Akademik Unvanlar / Görevler

Dr.Öğr.Üyesi, Abdullah Gül Üniversitesi, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2018 - Devam Ediyor

Yrd.Doç.Dr., Abdullah Gül Üniversitesi, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2016 - 2018

Verdiği Dersler

Computer Organization, Lisans, 2022 - 2023

İşletim Sistemleri, Lisans, 2022 - 2023

Computer Architecture, Yüksek Lisans, 2022 - 2023

SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

- I. **CompreCity: Accelerating the Travelling Salesman Problem on GPU with data compression**
Yalçın S., Usul H. B., Yalçın G.
Integration, ss.1-30, 2024 (SCI-Expanded)
- II. **Energy Trading on a Peer-to-Peer Basis between Virtual Power Plants Using Decentralized Finance Instruments**
SEVEN S., YOLDAŞ Y., Soran A., YALÇIN ALKAN G., Jung J., Ustun T. S., ÖNEN A.
SUSTAINABILITY, cilt.14, sa.20, 2022 (SCI-Expanded)
- III. **A Methodology for Comparing the Reliability of GPU-Based and CPU-Based HPCs**
Cini N., YALÇIN ALKAN G.
ACM COMPUTING SURVEYS, cilt.53, sa.1, 2020 (SCI-Expanded)
- IV. **Exploiting Existing Comparators for Fine-Grained Low-Cost Error Detection**
Yalçın G., Ergin O., Islek E., UNSAL O. S., CRISTAL A.
ACM TRANSACTIONS ON ARCHITECTURE AND CODE OPTIMIZATION, cilt.11, sa.3, ss.233-256, 2014 (SCI-Expanded)
- V. **Bit Impact Factor: Towards making fair vulnerability comparison**
Can S. Z., Yalçın G., Ergin O., UNSAL O. S., Cristal A.
Microprocessors and Microsystems, cilt.38, sa.6, ss.598-604, 2014 (SCI-Expanded)
- VI. **Using tag-match comparators for detecting soft errors**
Yalçın G., Ergin O.
IEEE Computer Architecture Letters, cilt.6, sa.2, 2007 (SCI-Expanded)

Kitaplar

- I. **Transactional Memory for Reliability**
YALÇIN G., UNSAL O.
Transactional Memory. Foundations, Algorithms, Tools, and Applications, Guerraoui R., Romano P. , Editör,
Springer International Publishing, İsviçre, ss.268-282, 2015
- II. **Transactional Memory for Reliability**
YALÇIN G., Unsal O.
Transactional Memory Foundations Algorithms Tools and Applications, Rachid Guerraoui ve Paolo Romano,
Editör, Springer, ss.268-282, 2014

Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar

- I. **Uygulamaların Güvenilirlik Analizi**
AKTAŞ H., YALÇIN G.
İşlemci Tasarım Çalıştayı, Türkiye, 19 Eylül 2019
- II. **Error Tolerating Methods for Increasing NAND Flash Memory Lifetime**
YALÇIN G.
1st WORKSHOP ON TF-X INTEGRATED PROCESSING UNIT TECHNOLOGIES, Türkiye, 11 - 13 Aralık 2018
- III. **Designing and Modelling Selective Replication for Fault-tolerant HPC Applications**
Subasi O., YALÇIN G., Zyulkyarov F., Unsal O., Labarta J.
17th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGRID), Madrid, İspanya, 14 - 17 Mayıs 2017, ss.452-457

- IV. **A runtime heuristic to selectively replicate tasks for application-specific reliability targets**
Subasi O., YALÇIN G., ZYULKYAROV F., UNSAL O., LABARTA J.
IEEE International Conference on Cluster Computing (CLUSTER), Taipei, Tayvan, 13 - 15 Eylül 2016, ss.498-505
- V. **CRC Based Memory Reliability for Task Parallel HPC Applications**
Subasi O., UNSAL O., LABARTA J., YALÇIN G., CRISTAL A.
2016 IEEE International Parallel and Distributed Processing Symposium (IPDPS), Chicago, Amerika Birleşik Devletleri, 23 - 27 Mayıs 2016, ss.1101-1112
- VI. **Energy minimization at all layers of the data center The ParaDIME project**
PALOMAR O., RETHINAGIRI S. K., YALÇIN G., TITOS R., PRIETO P., TORELLA E., UNSAL O., CRISTAL A., FELBER P., KNAUTH T.
Design Automation and Test in Europe, Dresden, Almanya, 14 - 18 Mart 2016, ss.684-689
- VII. **Exploring Energy Reduction in Future Technology Nodes via Voltage Scaling with Application to 10nm**
YALÇIN G., Rethinagiri S. K., Palomar O., Unsal O., Cristal A., Milojevic D.
2016 24th Euromicro International Conference on Parallel, Distributed, and Network-Based Processing (PDP), Heraklion, Crete, Greece, 17 - 19 Şubat 2016
- VIII. **JSRAM: A circuit-level technique for trading-off robustness and capacity in cache memories**
Ahangari H., Yalcin G., Ozturk O., UNSAL O., CRISTAL A.
IEEE Computer Society Annual Symposium on VLSI, ISVLSI 2015, Montpellier, Fransa, 8 - 10 Temmuz 2015, ss.149-154
- IX. **Flexicache Highly Reliable and Low Power Cache under Supply Voltage Scaling**
YALÇIN G., SEYEDI A., UNSAL O., CRISTAL A.
Latin American High Performance Computing Conference, Valparaiso, Şili, 20 - 22 Ekim 2014, ss.173-190
- X. **System-level power amp energy estimation methodology and optimization techniques for CPU-GPU based mobile platforms**
Rethinagiri S., YALÇIN G., Moreno J. A., Palomar O., Unsal O., Cristal A.
2014 IEEE 12th Symposium on Embedded Systems for Real-time Multimedia (ESTIMedia), Greater Noida, India, 16 - 17 Ekim 2014
- XI. **ParaDIME: Parallel Distributed Infrastructure for Minimization of Energy**
RETHINAGIRI S. K., PALOMAR O., SOBE A., KNAUTH T., BARCZYNSKI W., Yalcin G., Hayduk Y., CRISTAL A., UNSAL O., FELBER P., et al.
17th Euromicro Conference on Digital System Design (DSD), Verona, İtalya, 27 - 29 Ağustos 2014, ss.191-198
- XII. **Exploiting a fast and simple ECC for scaling supply voltage in level-1 caches**
Yalcin G., Islek E., Tozlu O., REVIRIEGO P., Cristal A., UNSAL O. S., Ergin O.
20th IEEE International On-Line Testing Symposium, IOLTS 2014, Catalunya, İspanya, 7 - 09 Temmuz 2014, ss.1-6
- XIII. **Neighbor cell assisted error correction for MLC NAND flash memories**
CAI Y., YALÇIN G., MUTLU O., HARATSCH E. F., CRISTAL A., UNSAL O., MAI K.
The 2014 ACM international conference on Measurement and modeling of computer systems - SIGMETRICS '14, Texas, Amerika Birleşik Devletleri, 16 - 20 Haziran 2014, ss.491-504
- XIV. **Combining error detection and transactional memory for energy-efficient computing below safe operation margins**
Yalcin G., SOBE A., HARMANCI D., VORONIN A., Wamhoff J., FELBER P., UNSAL O., CRISTAL A., FETZER C.
2014 22nd Euromicro International Conference on Parallel, Distributed, and Network-Based Processing, PDP 2014, Turin, İtalya, 12 - 14 Şubat 2014, ss.248-255
- XV. **Fault tolerance for multi-threaded applications by leveraging hardware transactional memory**
Yalcin G., UNSAL O. S., CRISTAL A.
2013 ACM International Conference on Computing Frontiers, CF 2013, Ischia, İtalya, 14 - 16 Mayıs 2013
- XVI. **Circuit design of a novel adaptable and reliable L1 data cache**
Seyedi A., Yalcin G., UNSAL O. S., Cristal A.
23rd ACM International Conference of the Great Lakes Symposium on VLSI, GLSVLSI 2013, Paris, Fransa, 2 - 03 Mayıs 2013, ss.333-334

- XVII. **FaultTM Error Detection and Recovery Using Hardware Transactional Memory**
YALÇIN G., UNSAL O., CRISTAL A.
Design Automation and Test in Europe, Grenoble, Fransa, 18 - 22 Mart 2013, ss.220-2205
- XVIII. **Flash correct-and-refresh: Retention-aware error management for increased flash memory lifetime**
CAI Y., Yalçin G., MUTLU O., HARATSCH E. F., CRISTAL A., UNSAL O. S., MAI K.
2012 IEEE 30th International Conference on Computer Design, ICCD 2012, Montreal, Kanada, 30 Eylül - 03 Ekim 2012, ss.94-101
- XIX. **SymptomTM: Symptom-based error detection and recovery using Hardware Transactional Memory**
Yalçin G., UNSAL O. S., Cristal A., HUR I., VALERO M.
20th International Conference on Parallel Architectures and Compilation Techniques, PACT 2011, Galveston, TX, Amerika Birleşik Devletleri, 10 - 14 Ekim 2011, ss.199-200
- XX. **FIMSIM A fault injection infrastructure for microarchitectural simulators**
YALÇIN G., CRISTAL A., UNSAL O., VALERO M.
2011 IEEE 29th International Conference on Computer Design (ICCD), Boston, Amerika Birleşik Devletleri, 9 - 12 Ekim 2011, ss.431-432

Bilimsel Hakemlikler

Microelectronics Reliability, SCI Kapsamındaki Dergi, Nisan 2016

Metrikler

Yayın: 28

Atf (WoS): 99

Atf (Scopus): 154

H-İndeks (WoS): 3

H-İndeks (Scopus): 6