

September 6, 2016

Ali Şaman Tosun

Associate Professor
Department of Computer Science
University of Texas at San Antonio
6900 North Loop 1604 West
San Antonio, TX 78249
Tel: (210)458-7663
tosun@cs.utsa.edu
<http://www.cs.utsa.edu/~tosun>

Research Interests

My research interests span several areas with focus on storage and management of large scale data. I am also interested in network security and multimedia networking.

Academic Training

Ph.D, Computer and Information Science The Ohio State University, Columbus, OH.	June 2003
M.S., Computer and Information Science The Ohio State University, Columbus, OH.	December 1998
M.S., Computer Engineering and Information Science Bilkent University, Ankara, Turkey.	June 1997
B.S., Computer Engineering and Information Science Bilkent University, Ankara, Turkey.	June 1995

Work Experience

September 2009 - Present
Associate professor in Department of Computer Science
University of Texas at San Antonio

September 2003 - August 2009
Assistant professor in Department of Computer Science
University of Texas at San Antonio

September 1997 - June 2003
Graduate Research/Teaching Associate in Department of Comp. Inf. Sci.
Ohio State University

September 1995 - June 1997
Teaching Assistant in Computer Engineering Department
Bilkent University, Ankara, Turkey

Journal Publications

- Nihat Altıparmak, Ali Şaman Tosun, *Multithreaded Maximum Flow Based Optimal Replica Selection Algorithm for Heterogeneous Storage Architectures*, IEEE Transactions on Computers, volume 65, number 5, May 2016
- Baris Tas, Nihat Altıparmak, Ali Şaman Tosun, *Low-cost Indoor Location Management for Robots using IR leds and an IR camera*, ACM Transactions on Sensor Networks, volume 10, issue 4, June 2014
- Nihat Altıparmak, Ali Şaman Tosun, *Generalized Optimal Response Time Retrieval of Replicated Data from Storage Arrays*, ACM Transactions on Storage, volume 9, number 2, July 2013
- Nihat Altıparmak, Ali Şaman Tosun, *Equivalent Disk Allocations*, IEEE Transactions on Parallel and Distributed Systems, volume 23, issue 3, March 2012, pp. 538-546
- Ali Şaman Tosun, *Divide-and-conquer Scheme for Strictly Optimal Retrieval of Range Queries*, ACM Transactions on Storage, volume 5, issue 3, November 2009
- Ali Şaman Tosun, *Analysis and Comparison of Replicated Declustering Schemes*, IEEE Transactions on Parallel and Distributed Systems, volume 18, number 11, November 2007, pp. 1578-1591.
- Ali Şaman Tosun, *Threshold-based Declustering*, Elsevier Journal on Information Sciences, volume 177, number 5, pp. 1309-1331, March 2007.
- Hakan Ferhatosmanoglu, Ali Şaman Tosun, Guadalupe Canahuate, Aravind Ramachandran, *Efficient Parallel Processing of Range Queries through Replicated Declustering*, Journal of Parallel and Distributed Databases, volume 20, issue 2, pp. 117-147, September 2006
- Ali Şaman Tosun, *Efficient Retrieval of Replicated Data*, Journal of Parallel and Distributed Databases, volume 19, issue 2-3, pp. 107-124, May 2006

Refereed Conference Proceedings

- Everett Neil Rush, Bryan Harris, Nihat Altıparmak, Ali Şaman Tosun, *Dynamic Data Layout Optimization for High Performance Parallel I/O*, 23rd annual IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC 2016)
- Ali Tekeoglu, Ali Şaman Tosun, *A Testbed for Security and Privacy Analysis of IoT Devices*, International Workshop on Data Science for Internet of Things (DSIoT 2016), held in conjunction with MASS 2016
- Ali Tekeoglu, Ali Şaman Tosun, *Investigating Security and Privacy of a Cloud-Based Wireless IP Camera: NetCam*, 5th International Workshop on Privacy, Security and Trust in Mobile and Wireless Systems (MobiPST 2015), held in conjunction with ICCCN 2015
- Ali Tekeoglu, Ali Şaman Tosun, *A Closer Look into Privacy and Security of Chromecast Multimedia Cloud Communications*, Multimedia Cloud Communication Workshop, held in conjunction with INFOCOM 2015
- Baris Tas, Ali Şaman Tosun, *Resilient Data Collection in Mobile-assisted Wireless Sensor Networks*, Second International Workshop on Robotic Sensor Networks, held in conjunction with CPS Week 2015
- Nihat Altıparmak, Ali Şaman Tosun, *Continuous Retrieval of Replicated Data from Het-*

erogeneous Storage Arrays, 22nd International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS 2014)

Baris Tas, Ali Şaman Tosun, *Coordinating Robots for Connectivity in Wireless Sensor Networks*, 11th International Conference on Mobile Ad hoc and Sensor Systems (MASS 2014), IEEE

Andrew Wichmann, Turgay Korkmaz, Ali Şaman Tosun, *Minimum Hop and/or Minimum Distance Robot Movement with Connectivity Constraints in WRSNs*, IEEE Globecom 2014 Ad Hoc and Sensor Networking Symposium (GC'14 AHSN)

Baris Tas, Ali Şaman Tosun, *Controlled Path Traversal for a Mobile Element in Wireless Sensor Networks*, 22nd International Conference on Computer Communications and Networks (ICCCN 2013), IEEE

Nihat Altıparmak, Ali Şaman Tosun, *Replication Based QoS Framework for Flash Arrays*, IEEE International Conference on Cluster Computing (Cluster 2012), IEEE

Nihat Altıparmak, Ali Şaman Tosun, *Integrated Maximum Flow Algorithm for Optimal Response Time Retrieval of Replicated Data*, 41st IEEE International Conference on Parallel Processing (ICPP 2012), IEEE

Baris Tas, Ali Şaman Tosun, *Data Collection using Transmit-Only Sensors and a Mobile Robot in Wireless Sensor Networks*, 21st International Conference on Computer Communications and Networks (ICCCN 2012), IEEE

Nihat Altıparmak, Ali Tekeoglu, Ali Şaman Tosun, *DoS Resilience of Real Time Streaming Protocol*, 30th IEEE International Performance Computing and Communications Conference (IPCCC 2011), IEEE

Ali Tekeoglu, Nihat Altıparmak, Ali Şaman Tosun, *Approximating the Number of Active Nodes Behind a NAT Device*, 20th International Conference on Computer Communications and Networks (ICCCN 2011), IEEE

Baris Tas, Ali Şaman Tosun, *Mobile Assisted Key Distribution in Wireless Sensor Networks*, IEEE International Conference on Communications (ICC 2011), IEEE

Yifeng Guo, Fanxin Kong, Dakai Zhu, Ali Şaman Tosun and Qingxu Deng, *Sensor Placement for Lifetime Maximization in Monitoring Oil Pipelines*, ACM/IEEE First International Conference on Cyber-Physical Systems (ICCP 2010), Stockholm, Sweden, Apr. 2010.

Baris Tas, Nihat Altıparmak, Ali Şaman Tosun, *Low Cost Indoor Location Management System using Infrared Leds and Wii Remote Controller*, 28th IEEE International Performance Computing and Communications Conference (IPCCC 2009), IEEE

Dakai Zhu, Yifeng Guo, Ali Şaman Tosun, *Multi-path Planning for Mobile Element to Prolong the Lifetime of Wireless Sensor Networks*, 15th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA 2009), IEEE

Ali Şaman Tosun, Turgay Korkmaz, *PeerGraph: A Distributed Data Structure for Peer-to-peer Streaming*, IEEE Globecom Communications Software and Services Symposium, 2008

Tan Apaydin, Guadalupe Canahuate, Hakan Ferhatosmanoglu, Ali Şaman Tosun, *Dynamic Data Organization for Bitmap Indices*, Third International ICST Conference on Scalable Information Systems, 2008, (Acceptance Rate 28 %)

- Tan Apaydin, Ali Şaman Tosun, Hakan Ferhatosmanoglu, *Analysis of Basic Data Reordering Techniques*, short paper, 20th International Conference on Scientific and Statistical Database Management, 2008
- Ali Şaman Tosun, *Multi-site Retrieval of Declustered Data*, 28th International Conference on Distributed Computing Systems, 2008, IEEE, (Acceptance Rate 16 %)
- Fatih Altiparmak, Ali Şaman Tosun, Hakan Ferhatosmanoglu, Ahmet Sacan, *Automated Data Discovery in Similarity Score Queries*, short paper, To appear in 13th International Conference on Database Systems for Advance Applications, 2008.
- Murat Demirbaş, Onur Soysal, Ali Şaman Tosun, *Data Salmon: A Greedy Mobile Bases-tation Protocol for Efficient Data Collection in Wireless Sensor Networks*, International Conference on Distributed Computing on Sensor Systems, (DCOSS 2007), IEEE, pp. 267-280.
- Ali Şaman Tosun, *Space-efficient Structures for Detecting Port Scans*, 18th International Conference on Database and Expert Systems Applications (DEXA 2007), pp. 120-129.
- Ali Şaman Tosun, *Equivalent Disk Allocations*, 22nd ACM Symposium on Applied Computing (SAC 2007), ACM, pp. 500-505
- Tan Apaydin, Guadalupe Canahuate, Hakan Ferhatosmanoglu, Ali Şaman Tosun, *Approximate Encoding for Direct Access and Query Processing over Compressed Bitmaps*, 32nd International Conference on Very Large Data Bases (VLDB 2006), pp. 846-857, (Acceptance Rate 13.9 %).
- Sailaja Uppalapati and Ali Şaman Tosun, *Partial Video Replication for Peer-to-peer Streaming*, 8th International Conference on Management of Multimedia Networks and Services (MMNS 2005), IEEE, pp. 314-325
- Ali Şaman Tosun, *Threshold-based Declustering in High Dimensions*, 16th International Symposium on Database and Expert Systems Applications (DEXA 2005), pp. 818-827 (Acceptance Rate 23.5 %)
- Ali Şaman Tosun, *Design-theoretic Approach to Replicated Declustering*, International Conference on Information Technology (ITCC 2005), IEEE, pp. 226-231
- Ali Şaman Tosun, *Constrained Declustering*, International Conference on Information Technology (ITCC 2005), IEEE, pp. 232-237
- Hakan Ferhatosmanoglu, Ali Şaman Tosun, Aravind Ramachandran *Replicated Declustering of Spatial Data*, 23rd ACM SIGMOD-SIGACT-SIGART Symposium on Principles of Database Systems (PODS 2004), ACM, pp. 125-135 (Acceptance Rate 16 %)
- Ali Şaman Tosun, *Replicated Declustering for Arbitrary Queries*, 19th ACM Symposium on Applied Computing (SAC 2004), ACM, pp. 748-753
- Amit Singh, Hakan Ferhatosmanoglu, Ali Şaman Tosun, *High Dimensional Reverse Nearest Neighbor Queries*, 12th International Conference on Information and Knowledge Management (CIKM 2003), ACM, pp. 91-98 (Acceptance Rate 15 %)
- Ali Şaman Tosun, Hakan Ferhatosmanoglu, *Vulnerabilities in Similarity Search Based Systems*, 11th International Conference on Information and Knowledge Management (CIKM 2002), ACM, pp. 110-117 (Acceptance Rate 25 %)

Ali Şaman Tosun, Hakan Ferhatosmanoglu, *Optimal Parallel I/O Using Replication* International Conference on Parallel Processing (ICPP 02), Workshop on Scheduling and Resource Management, pp. 506-513

Ali Şaman Tosun, Wu-chi Feng, *On Error Preserving Encryption Algorithms for Wireless Video Transmission*, ACM Multimedia 2001, ACM, pp. 302-308

Ali Şaman Tosun, Wu-chi Feng, *Light-weight Security mechanisms for Wireless Video Transmission*, The International Conference on Information Technology: Coding and Computing (ITCC 2001), IEEE, pp. 157-161

Ali Şaman Tosun, Wu-chi Feng, *On improving Quality of Video for H.263 over Wireless CDMA Networks* IEEE Wireless Communications and Networking Conference 2000 (WCNC 2000), IEEE.

Ali Şaman Tosun, Amit Agarwal, *Efficient Broadcast Algorithms for Heterogeneous Networks of Workstations* 13th International Conference on Parallel and Distributed Computing Systems (PDCS 2000).

Ali Şaman Tosun, Amit Agarwal, Wu-chi Feng, *Providing Efficient Support for Lossless Video Transmission and Playback*, 10th International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 2000), ACM

Ali Şaman Tosun, Wu-chi Feng, *Efficient Multi-layer Coding and Encryption of MPEG Video Streams*, IEEE International Conference on Multimedia and Expo (ICME 2000), IEEE, pp. 119-122.

Ali Şaman Tosun, Wu-chi Feng, *The Effect of Bit Errors on MPEG Video Quality for Wireless Networks*, Proceedings of 5th International Conference on Information Systems Analysis and Synthesis (ISAS'99).

Other Peer Reviewed Work

Fred Diehl, Joshua Curtis, Salvador Rodriguez, Ali Şaman Tosun and Dakai Zhu, *Power-efficient Real-time Data Collection using Mobile Robots*, 28th Real-time Systems Symposium, Work-in-progress Session, 2007, 4 pages.

Dakai Zhu, Ali Şaman Tosun, *Adaptive Path Scheduling for Mobile Element to Prolong the Lifetime of Wireless Sensor Networks*, 14th IEEE Real-Time and Embedded Technology and Applications Symposium, Work-in-progress Session, 2008, 4 pages.

Teaching Experience

CS 1083: Introduction to Programming I for Computer Scientists	Spring 2016
CS 3873: Computer Networks	Fall 2006
CS 1063: Introduction to Computer Programming I	Spring 2016
CS 2123: Data Structures	Spring 2016
CS 1713: Introduction to Computer Programming II	Spring 2015
CS 2123: Data Structures	Spring 2015
CS 6353: Unix and Network Security	Fall 2014
CS 1713 Introduction to Computer Programming II	Fall 2014
CS 2073: Computer Programming with Engineering Applications (2 sections)	Spring 2014
CS 6353: Unix and Network Security	Fall 2013
CS 2073: Computer Programming with Engineering Applications	Fall 2013
CS 2073: Computer Programming with Engineering Applications (2 sections)	Spring 2013

CS 2073: Computer Programming with Engineering Applications (2 sections)	Fall 2012
CS 2073: Computer Programming with Engineering Applications	Spring 2012
CS 3743: Database Systems	Fall 2011
CS 2073: Computer Programming with Engineering Applications	Fall 2011
CS 6353: Unix and Network Security	Spring 2011
CS 2073: Computer Programming with Engineering Applications	Spring 2011
CS 3743: Database Systems	Fall 2010
CS 7123: Research Seminar	Fall 2010
CS 6353: Unix and Network Security	Spring 2010
CS 2073: Computer Programming with Engineering Applications	Spring 2010
CS 6353: Unix and Network Security	Spring 2009
CS 2073: Computer Programming with Engineering Applications	Fall 2008
CS 3743: Database Systems	Fall 2008
CS 2073: Computer Programming with Engineering Applications	Spring 2008
CS 6353: Unix and Network Security	Spring 2008
CS 2073: Computer Programming with Engineering Applications	Fall 2007
CS 2073: Computer Programming with Engineering Applications	Spring 2007
CS 2073: Computer Programming with Engineering Applications	Fall 2006
CS 6463 AT: Unix and Network Security	Fall 2006
CS 4873: Computer Networks	Spring 2006
CS 3743: Database Systems	Fall 2005
CS 6593: Multimedia Systems	Fall 2005
CS 4873: Computer Networks	Spring 2005
CS 6593: Networked Multimedia	Fall 2004
CS 6973 SS:Unix and Network Security	Spring 2004
CS 4873: Computer Networks	Fall 2003

Funded Research Grants

Mobile Assisted Security in Wireless Sensor Networks, PI, Army Research Office, \$ 561,999, April 2011 - March 2015

II-NEW: Enhanced Parallelization for High Performance Computing, Co-PI, National Science Foundation, \$ 227,178, August 2009 - July 2012

High Throughput I/O for Large Scale Data Repositories, PI, National Science Foundation, \$ 299,926, May 2007 - April 2010.

Monitoring Support for Intrusion Detection, PI, Center for Infrastructure Assurance and Security at UTSA, \$85,000, January 2007 - December 2007.

Privacy Preserving Database Operations, PI, Center for Infrastructure Assurance and Security at UTSA, \$45,587, June 2003 - December 2005.

Program Committee

11th International Conference on Parallel and Distributed Systems (ICPADS 2005)

2th International Conference on Embedded Software and Systems (ICCESS 2005)

Workshop on Evolution toward Next Generation Internet, Held with ICCS 2006

International Conference on Wireless Algorithms, Systems and Applications (WASA 2006)

International Conference on Parallel Processing (ICPP 2006)

IEEE International Workshop on Wireless Mesh and Ad Hoc Networks (WiMAN 2007)

The 33rd IEEE Conference on Local Computer Networks (LCN 2008)

IEEE International Conference on Communications (ICC 2009)

The 34th IEEE Conference on Local Computer Networks (LCN 2009)
6th International Conference on Embedded Software and Systems (ICESS 2009)
30th IEEE Real-time Systems Symposium, Work-in-Progress Session (RTSS 2009 WiP)
IEEE International Conference on Communications (ICC 2010)
IEEE Global Communications Conference (GLOBECOM 2010)
The 35th IEEE Conference on Local Computer Networks (LCN 2010)
IEEE International Conference on Communications (ICC 2011)
IEEE Global Communications Conference (GLOBECOM 2011)
IEEE Wireless Communications & Networking Conference (WCNC 2011)
The 36th IEEE Conference on Local Computer Networks (LCN 2011)
IEEE International Conference on Communications (ICC 2012)
IEEE Global Communications Conference (GLOBECOM 2012)
The 37th IEEE Conference on Local Computer Networks (LCN 2012)
IEEE International Conference on Communications (ICC 2013)
IEEE Global Communications Conference (GLOBECOM 2013)
The 38th IEEE Conference on Local Computer Networks (LCN 2013)
The 23rd IEEE Int. Symp. on Personal, Indoor and Mobile Radio Communications
IEEE Wireless Communications and Networking Conference (WCNC 2013)
International Conference on Connected Vehicles and Expo (ICCVE 2013)
IEEE Wireless Communications and Networking Conference (WCNC 2014)
International Conference on Connected Vehicles and Expo (ICCVE 2014)
The 39th IEEE Conference on Local Computer Networks (LCN 2014)
IEEE International Conference on Communications (ICC 2014)
IEEE Global Communications Conference (GLOBECOM 2014)
IEEE Wireless Communications and Networking Conference (WCNC 2015)
International Conference on Connected Vehicles and Expo (ICCVE 2015)
IEEE International Conference on Communications (ICC 2015)
IEEE Global Communications Conference (GLOBECOM 2015)
IEEE Wireless Communications and Networking Conference (WCNC 2016)
IEEE International Conference on Communications (ICC 2016)
IEEE Global Communications Conference (GLOBECOM 2016)

Current Students

Sajad Khorsandroo, *Working on Software Defined Network Support for Cloud Computing*

Graduated Students

Ali Tekeoglu, PhD Student, *Security Analysis of Multimedia Communication Protocols in Traditional and Emerging Models*, August 2015, Assistant Professor at SUNY Polytechnic University (will join august 2016)

Baris Tas, PhD Student, *Mobile Assisted Security in Wireless Sensor Networks*, December 2013, Dell Computer

Nihat Altiparmak, PhD Student, *Improving Performance and Predictability of Storage Arrays*, May 2013, Assistant Professor at University of Louisville

Fred Diehl, MS Thesis, *Route Scheduling in a Wireless Network using a Mobile Data Collection Agent*, Fall 2007

Awards

Scholarship from Ohio State University for graduate study 1997-2005
NATO science fellowship for graduate study (\$5000)

Scholarship from Bilkent University for graduate study 1995-1997

Scholarship from Bilkent University for undergraduate study 1991-1995

Ranked 205th in National University Entrance examination among one million students