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Ali Şaman Tosun

Associate Professor
Department of Computer Science
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Personal Information

Turkish Citizen, Permanent Resident in USA.

Research Interests

My research interests span several areas with focus on storage and management of large scale data. I am also interested in multimedia 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 - Present
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, *Equivalent Disk Allocations*, IEEE Transactions on Parallel and Distributed Systems, to appear

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

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 (ICCPs 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 Altıparmak, 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 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 2014

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 34rd IEEE Conference on Local Computer Networks (LCN 2009)
6th International Conference on Embedded Software and Systems (ICCESS 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 35rd 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 36rd IEEE Conference on Local Computer Networks (LCN 2011)
IEEE International Conference on Communications (ICC 2012)
IEEE Global Communications Conference (GLOBECOM 2011)
The 23rd IEEE International Symposium on Personal, Indoor and Mobile Radio Communications

Current Students

Ali Tekeoglu, PhD Student
Nihat Altiparmak, PhD Student
Baris Tas, PhD Student

Student Thesis

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