

## Curriculum Vitae

### Personal Information

Name **Kamil Sarac**  
School Erik Jonsson School of Engineering and Computer Science  
Department Dept. of Computer Science  
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### Research Interests

Computer networks, network measurements and Internet topology mapping, network sampling, overlay networks and their use in network security.

### Educational History

- **PhD in Computer Science (Jan. 1998 – Jul. 2002)**  
University of California at Santa Barbara, Santa Barbara, CA, USA  
Ph.D. Thesis: *Multicast Monitoring: Supporting a Robust Multicast Service in the Internet*  
Advisor: Prof. Kevin C. Almeroth
- **MS in Computer Science (Apr. 1996 – Dec. 1997)**  
University of California at Santa Barbara, Santa Barbara, CA, USA  
M.S. Thesis: *DFT-based Techniques for Join-size Estimation*  
Advisor: Profs. Amr El-Abadi and Omer Egencioglu
- **BS in Computer Engineering (Sep. 1990 – Jul. 1994)**  
Middle East Technical University, Ankara, Turkey

### Employment History

- **Associate Department Head**, Department of Computer Science, UT Dallas, (9/21 – Present)  
**Director of Education Programs**, CyberSecurity Research and Education Institute of UT Dallas (9/10 – Present)  
**Professor**, Dept. of Computer Science, UT Dallas, Richardson, TX (9/18 – Present)  
**Associate Professor**, Dept. of Computer Science, UT Dallas, Richardson, TX (9/09 – 8/18)  
**Assistant Professor**, Dept. of Computer Science, UT Dallas, Richardson, TX (9/02 – 8/09)  
Developed a research and education program in computer networks. Developed two brand new courses: *Computer Networks Lab Course* (undergrad level) and *Network Security Course* (grad level). Developed and taught other computer networks courses both at undergrad and grad levels. Supervised six PhD dissertations and five MS theses.
- **Research/Teaching Assistant**, Dept. of Computer Science, UC Santa Barbara, Santa Barbara, CA (4/96-7/02) Conducted doctoral research in Internet multicasting and IP multicast monitoring and management. Developed several multicast monitoring systems and tools. Held discussion sessions, prepared homework assignments and course projects, maintained records, and tutored students for various undergraduate and graduate courses.

## **Professional Recognitions, Awards, and Memberships**

### Awards

- **FRIEND of the Office of Research at UT Dallas**, in recognition of achievement in surpassing a cumulative level of federal research expenditures of more than \$500,000 in FY 2020.
- **Jonsson School Distinguished Teaching Award for Computer Science**, April 2014.
- **Departmental Service Award, CS Dept., UT Dallas**, December 2014, December 2016, December 2020.
- **Supervised the PhD dissertation that received the best dissertation award in CS Dept.**, for PhD dissertation of Mehmet H Gunes in 2007-2008 academic year.
- **QAD Fellowship**, \$5,000 for 2000-2001 academic year.
- **Project Recognition**, *sdr-monitor* project web site was selected by [Links2Go.com](http://Links2Go.com) as a “Key Resource” in the MBone (IP multicast deployment) topic in 2000.
- **Scholarship**, Ministry of Education, 1996, Republic of Turkey.

### Membership

- **Senior Member**, Institute of Electrical and Electronics Engineers (IEEE)

### Professional Recognitions

- **General Chair**, IEEE ICNP Conference, 2021.
- **Editor**, Ad Hoc Networks Journal (January 2008 – 2019).
- **Publication Chair**, IEEE ICNP Conference, 2008 and 2009.
- **Organizer and Co-Chair**, IEEE Workshop on End-to-End Monitoring Techniques and Services (E2EMON), Munich, Germany, May 2007.
- **Publicity Committee Co-Chair**, IEEE ICNP Conference, Santa Barbara, CA, USA, November 2006.
- **Workshop Co-Chair**, IEEE International Conference on Pervasive Services (ICPS), Santorini, Greece, July 2005.
- **TPC Co-Chair**, Special Track on Computer Networks (CN), ACM Symposium on Applied Computing (SAC), Nicosia, Cyprus, March 2004.
- **Session Chair**, Fifth International Conference on Broadband Communications, Networks and Systems, London, UK, September 2008.
- **Session Chair**, IEEE International Conference on Communication (ICC), Wireless Ad Hoc and Sensor Networks Symposium, Istanbul, Turkey, June 2006.
- **Session Chair**, Technical Session on Path Monitoring, Workshop on End-to-End Monitoring Techniques and Services (E2EMON), San Diego, CA, USA, October 2004.

## **Graduate Student Supervision**

### Ph.D. Students

1. Dr. Chao Gong (7/2007) – first appointment: Assistant professor of Comp Science at Univ. of Mary Hardin-Baylor.
2. Dr. Mehmet H. Gunes (7/2008) – first appointment: Assistant professor of Comp Science at Univ. of Nevada, Reno.
3. Dr. Mehmet Baysan (8/2008, as co-adviser) – first appointment: postdoc at Univ. Toronto.
4. Dr. Jinu Kurian (12/2009) – first appointment: Senior engineer at xG Tehcnology, Inc.
5. Dr. Mehmet E. Tozal (6/2012) – first appointment: Assistant professor of Computer Science at Univ. Lousiana at Lafayette.

6. Dr. Emrah Cem (12/2016) – first appointment: Software engineer at imo.im

### M.S. Students

1. Pavan Namburi (12/2004) – first employer - Qualcomm Inc.
2. Sevcan Bilir (12/2004) – first employer - Management Science Associates.
3. Avinash Chiganmi (8/2006) – first employer - Qualcomm Inc.
4. Hemanth Srinivasan (7/2008) – first employer Microsoft Corporation.
5. Suhel Patel (8/2010) – continued as a PhD student in CS Dept. in UT Dallas.

### Other MS Student Supervision (with no MS thesis)

1. Saipriya Gowdamachandran: Project work on “Energy Efficient Broadcast in Ad Hoc Networks.” Now with Qualcomm Inc.
2. Sachin Karisiddappa: A Cisco Systems supported project work on “The Last Mile: Building the Final Piece of One-to-Many Content Distribution” Now with Cisco Systems.
3. Nazim Ahmed
4. Partha De
5. Moses Ike
6. Richard Antiabong

### Undergraduate Student Supervision

1. Nicolas Nielsen: Co-authored our work on “Impact of Alias Resolutions in traceroute-based Smapling Network Topologies” PAM, 2007.
2. Michael Aldridge and Nicklaus McClendon: Project work on “CTF-PM: CTF Package Manager A Cybersecurity Competition Management System”, Started in Spring 2017.
3. Melissa Fulfer: Project work on “Evaluating Security Configurations of HTTPS Servers in the Internet”, Started in Spring 2017.

### Graduate Student Committees

I have served on PhD dissertation and MS thesis committees for the following students:

**PhD Dissertation Committees:** Hachem Moussa (2020), Trusit Shah (2019), Krishna Kadiyala (2019), Afshin Taghavi Nasrabadi (2019), Shou-Yu Lee (2018), Xuelin Li (2018), Yihao Li (2017), Joseph D. Beshay (2017), David Urbina (2016), Hyung Jae Chang (2012), Chanaka Liyana Arachchige (2012), Qasim Javed (2012), Shanty Menezes (2010), Mohamad Bayan (2010), Hai Vu (2009), Ming Li (2006), Sriranjani Sitaraman (2006), Shashidhar Rao Gandham (2006), Mansoor Mohsin (2006), Natarajan Meghanathan (2005), and Sanket Nesargi (2002).

**MS Thesis Committees:** Novolin Das, Vijay Prasan Rajavenkateswaren, Kunal Sahu, Guytak Park, Chowdhury Barua, Jason P. Karazian, Wade A. Fagen, Kuppahalli L. Phaneesh, Hai Trong Vu, Shwetha Ramesh, Ashok Lalwani, Sriharsha Kadalba, Vedha C. Bharathi, Yogest G. Iyer, Madhu Yennamani, and Rakesh Bilaney.

### Grants

1. “Human-in-the-Loop: XAI-enabled Vulnerability Detection, Investigation, and Mitigation”, Role: co-PI, NSA, \$491,485, 2021-2024.
2. “UTD SFS Renewal: Enriching Technical Program Offerings for SFS Scholarship Program at UTD”, Role: PI, NSF, \$4,014,883, 2019-2024.

3. “SFS Capacity Building in Security of Software Defined Networks”, Role: PI, NSF, \$497,002, 2018-2021.
4. “CTF-PM: CTF Package Manager A Cybersecurity Competition Management System”, Role: PI, UT System, Texas National Security Network Funding Program, \$47,000, 2017-2019.
5. “Supplement for UTD SFS Renewal: Growing a Cybersecurity Community thru SFS Scholarship Program at UTD”, Role: PI, NSF, \$10,000, 2017.
6. “Supplement for UTD SFS Renewal: Growing a Cybersecurity Community thru SFS Scholarship Program at UTD”, Role: PI, NSF, \$183,500, 2014 – 2019.
7. “UT Dallas Proposal for 2016 GenCyber Program”, Role: PI, NSA, \$99,641.79, 2016.
8. “TexSAW: Texas Cyber Security Awareness Week Event”, State Farm Gift, \$5,000. November 2016.
9. “TexSAW: Texas Cyber Security Awareness Week Event”, Raytheon Gift, \$1,000. November 2016.
10. “TexSAW: Texas Cyber Security Awareness Week Event”, State Farm Gift, \$2,000. October 2015.
11. “TexSAW: Texas Cyber Security Awareness Week Event”, PepsiCO Gift, \$2,000, October 2015.
12. “Texas Cyber Security Awareness Week Event”, \$1,500, HP Enterprises Gift, October 2015.
13. “UTD SFS Renewal: Growing a Cybersecurity Community thru SFS Scholarship Program at UTD”, Role: PI, NSF, \$4,288,355, 2014 – 2019.
14. “TexSAW: Texas Cyber Security Awareness Week Event”, State Farm Gift, \$2,000. September 2014.
15. “Federal Cyber Service: Scholarship for Service Program in UT Dallas” (Supplement for the original grant), Role: PI, NSF, \$73,211, 2014.
16. “DoD Information Assurance Scholarship Program”, Role: PI, Department of Defense, National Security Agency, \$40,000, 2013-2014.
17. “DoD Information Assurance Scholarship Program”, Role: PI, Department of Defense, National Security Agency, \$85,894, 2012-2013.
18. “Federal Cyber Service: Scholarship for Service Program in UT Dallas” (Student travel grants for TexSAW 2012 event, Role: PI, NSF, \$10,000, 2012.
19. “DoD Information Assurance Scholarship Program”, Role: PI, Department of Defense, National Security Agency, \$74,160, 2011-2012.
20. “Capacity Building for Assured Cloud Computing”, Role: Co-PI, NSF, \$264,580, 2011-2013.
21. “Federal Cyber Service: Scholarship for Service Program in UT Dallas” (Student travel grants for TexSAW 2011 event, Role: PI, NSF, \$10,000, 2011.
22. “Federal Cyber Service: Scholarship for Service Program in UT Dallas”, Role: PI (Co-PIs: Drs. Thuraisingham, Sha, Hamlen, and Kantarcioglu), NSF, \$1.8M, 2010-2014.
23. “DoD Information Assurance Scholarship Program”, Role: Co-PI (PI: Dr. Khan), Department of Defense, National Security Agency, \$44,454, 2010-2011.
24. “Training Students for Careers in Information Assurance”, Role: PI, Department of Defense, National Security Agency, \$61,853, 2009-2010.
25. “Bridging Support in Mixed Deployment Multicast Environments”, Role: PI, Cisco Systems, Cisco Collaborative Research Initiative Program, \$50,000, 2007-2008.
26. “Capacity Building: Training Students for Careers in Information Assurance”, Role: PI, Co-PI: Prof. Gopal Gupta, Department of Defense, National Security Agency, \$75,000, 2006-2007.  
UTD Matching Fund: \$24,000 – Erik Jonsson School, Texas Enterprise Funds.
27. “The Last Mile: Building the Final Piece in One-to-Many Content Distribution”, Role: PI, Cisco Systems, Cisco Collaborative Research Initiative Program, \$50,000, 2006-2007.  
UTD Matching Fund: \$16,000 – Erik Jonsson School, Texas Enterprise Funds.
28. “P2cast: Receiver Controlled Communication Service for the Internet”, Role: PI, UTD Cyber Security and Emergency Preparedness Institute, \$33,333, 2005-2006.
29. “MACroscoPHY: Integrating Multiple-Antenna Systems and MAC Protocol”, Role: Co-PI, PI: Prof. Murat Torlak, Erik Jonsson School, Texas Enterprise Funds, \$30,000, 2005-2006.
30. “Equipment Funding for Building an Instructional Lab for CS 4396 Computer Networks Lab Course”, Role: PI, Erik Jonsson School, Texas Enterprise Funds, \$30,000, 2005.
31. “Improving the Robustness of Multicast in the Internet”, Role: PI, Cisco Systems, Cisco Collaborative Research Initiative Program, \$40,000, 2004-2005.

UTD Matching Fund: \$40,000 – Erik Jonsson School, Texas Enterprise Funds.

## **Books Edited**

1. Proceedings of the Fifth IEEE/IFIP Workshop on End-to-End Monitoring Techniques and Services, Editors: Kamil Sarac and Timur Friedman, IEEE Communications Society, 68 pages, April 2007. Please see Attachment F for a copy of the cover page and initial pages of this edited book.

## **Refereed Journal Articles**

1. Vulnerability Challenges of Software Defined Networks, Z. Haas, T. Culver, and K. Sarac, *IEEE Communications Magazine*, vol: 59, issue: 7, pp.88-93, July 2021.
2. Estimation of Structural Properties of Online Social Networks at the Extreme, E. Cem and K. Sarac, *Computer Networks*, vol: 108, pp. 323-344, 2016.
3. Graph Based Induction of Unresponsive Routers in Internet Topologies. H. Kardes, M.H. Gunes, and K. Sarac, *Computer Networks*, 81:178-200, 2015.
4. SKAIT: A Parameterized Key Assignment Scheme for Confidential Communication in Resource Constrained Ad Hoc Wireless Networks, R.L. Novales, N. Mittal, K. Sarac, *Ad Hoc Networks Journal*, Vol. 20, pp 163-181, September 2014.
5. Adaptive Information Coding for Secure and Reliable Wireless Telesurgery Communications, M.E. Tozal, Y. Wang, E. Al-shaer, K. Sarac, B. Thuraisingham, B-T. Chu, *Journal of Mobile Networks and Applications*, Vol.18, Issue 5, pp 697-711, October 2013.
6. Polynomial Time Solution to Minimum Forwarding Set Problem in Wireless Networks under Disk Coverage Model, M. Baysan, K. Sarac, and R. Chandrasekaran, *Ad Hoc Networks Journal*, Vol.10, No. 7, pp. 1253-1266, September 2012.
7. PalmTree: An IP Alias Resolution Algorithm with Linear Probing Complexity, M.E. Tozal and **K. Sarac**, *Computer Communications*, Vol. 34, No. 5, pp. 658-669, April 2011.
8. A Survey on the Design, Applications and Enhancements of Application Layer Overlay Network, J. Kurian and **K. Sarac**, *ACM Computing Surveys*, Vol.43, No.1, pp.5.1-5.34, November 2010.
9. Resolving IP Aliases in Building Traceroute-Based Internet Maps, M. Gunes and **K. Sarac**, *IEEE/ACM Transactions on Networking*, Vol. 17, No. 6, pp.1738-1751, December 2009.
10. A Polynomial Time Solution to Minimum Forwarding Set Problem in Wireless Networks under Unit Disk Coverage Model, M. Baysan, **K. Sarac**, R. Chandrasekaran, and S. Bereg, *IEEE Transactions on Parallel and Distributed Systems*, Vol. 20, No. 7, pp. 913-924, July 2009.
11. Defending Network-Based Services Against Denial of Service Attacks, J. Kurian and **K. Sarac**, *International Journal on Network Security*, Vol.9, No.2, pp.186-200, September 2009.
12. Toward a Practical Packet Marking Approach for IP Traceback, C. Gong and **K. Sarac**, *International Journal of Network Security*, Vol.8, No.3, pp.271-281, March 2009.
13. A More Practical Approach for Single-Packet IP Traceback using Packet Logging and Marking, C. Gong and **K. Sarac**, *IEEE Transactions on Parallel and Distributed Systems*, Vol.19, No.10, pp.1310-1324, October 2008.
14. Variable Power Broadcast using Local Information in Ad Hoc Networks, A. Chiganmi, M. Baysan, **K. Sarac**, and R. Prakash, *Ad Hoc Networks Journal*, Vol.6, No.5, pp.675-695, July 2008.
15. Overhead Distribution of Value-Added Internet Services: Measurement Challenges and Results, M. Gunes, S. Bilir, **K. Sarac**, and T. Korkmaz, *Computer Networks Journal*, Vol.51, No.14, pp.4153-4173, October 2007.
16. Single Packet IP Traceback in AS-level Partial Deployment Scenario, T. Korkmaz, C. Gong, **K. Sarac**, and S. Dykes, *International Journal on Security and Networks*, Vol.2 No:1/2, pp. 95-108, March 2007.

17. Load-Balanced Agent Activation for Value-Added Network Services, C. Gong, **K. Sarac**, O. Daescu, B. Raghavachari, and R. Jothi, *Computer Communications Journal*, Vol.29, No. 11, pp. 1905-1916, July 2006.
18. Practical Utilities for Monitoring Multicast Service Availability, P. Namburi, **K. Sarac**, and K. Almeroth, *Computer Communications Journal*, Vol.29, No.10, pp.1675-1686, June 2006.
19. Monitoring IP Multicast in the Internet: Recent Advances and Existing Challenges, **K. Sarac** and K. Almeroth, *IEEE Communications Magazine*, Vol.43, Issue.10, pp.85-91, October 2005.
20. Application Layer Reachability Monitoring for IP Multicast, **K. Sarac** and K. Almeroth, *Computer Networks Journal*, Vol.48, No.2, pp.195-213, June 2005.
21. A Distributed Approach for Monitoring Multicast Service Availability, **K. Sarac** and K. Almeroth, *Journal of Network and Systems Management*, Vol.12, No.3, pp.327-348, September 2004.
22. Tracertree: A Scalable Mechanism to Discover Multicast Tree Topologies in the Internet, **K. Sarac** and K. Almeroth, *IEEE/ACM Transactions on Networking*, Vol.12, No.5, pp.795-808, October 2004.
23. Supporting Multicast Deployment Efforts: A Survey of Tools for Multicast Monitoring, **K. Sarac** and K. Almeroth, *Journal of High Speed Networks*, Vol.9, No.3-4, pp.191-211, 2000.
24. DFT Techniques for Size Estimation of Database Join Operations, **K. Sarac**, A. El-Abbadi, O. Egcecioglu, *International Journal of Foundation of Computer Science*, Vol.10, No.1, pp.81-102, 1999.

## Refereed Conference Articles

1. Poster: Private Internet: A Global End-to-End Service Model, Souvik Das and Kamil Sarac, *IEEE 29<sup>th</sup> International Conference on Network Protocols (ICNP)*, Dallas, TX, October 2021.
2. Mitigating Evasion Attacks on Machine Learning based NIDS Systems in SDN, Aparna Ganesan and Kamil Sarac, *IEEE 7<sup>th</sup> International Conference on Network Softwarization (NetSoft)*, Tokyo, Japan, June/July 2021.
3. ZIDX: A Generic Framework for Random Access to BGP Records in Compressed MRT Datasets, Omer Ozarslan and Kamil Sarac, *IEEE ICCCN 2020*, Honolulu, Hawaii, USA (virtual), August 2020.
4. Estimating Clustering Coefficients via Metropolis-Hastings Random Walk and Wedge Sampling on Large OSN Graphs, Emrah Cem and Kamil Sarac, *IEEE IPCCC*, Las Vegas, NV, December 2016.
5. PPEP: A Deployable Privacy Preserving E-Commerce Protocol for Electronic Goods, Moses Ike, Kamil Sarac, *the 6th International Conference on Communication and Network Security (ICCNS)*, Singapore, Nov 2016.
6. Heuristics for 2-Coverage Multi Point Relay Problem in Wireless Ad Hoc and Sensor Networks, Partha De, Kamil Sarac, R. Chandrasekaran, *Workshop on Green Networks (GreenNet)*, Tempe, AZ, May 2016.
7. Average Degree Estimation under Ego-Centric Sampling Design, Emrah Cem and Kamil Sarac, *8th IEEE International Workshop on Network Science for Communication Networks (NetSciCom)*, San Francisco, CA, April 2016.
8. An Experimental Study on Inter-domain Routing Dynamics using IP-level Path Traces, Nazim Ahmed and Kamil Sarac, *IEEE LCN*, Clearwater Beach, FL, October 2015.
9. Estimating the Size and Average Degree of Online Social Networks at the Extreme, Emrah Cem and Kamil Sarac, *IEEE ICC*, London, UK, June 2015.
10. Measuring Path Divergence in the Internet, Nazim Ahmed and Kamil Sarac, *IEEE IPCCC*, Austin, TX, December 2014.
11. Location Matters: Eliciting Responses to Direct Probes, Ethan Blanton, Mehmet E Tozal, Kamil Sarac, and Sonia Fahmy, *IEEE IPCCC*, San Diego, CA, December 2013.
12. Impact of Sampling Design in Estimation of Graph Characteristics, Emrah Cem, Mehmet E Tozal, and Kamil Sarac, *IEEE IPCCC*, San Diego, CA, December 2013.
13. Estimating Network Layer Subnet Characteristics via Statistical Sampling, M.E. Tozal and K. Sarac, *IFIP Networking*, Prague, Czech Republic, May 2012.
14. Subnet Level Network Topology Mapping, M.E. Tozal and K. Sarac, *IEEE IPCCC*, Orlando, Florida, November 2011.

15. A Security Framework for Service Overlay Networks: Operating in the Presence of Compromised Nodes, J. Kurian and K. Sarac, *Parallel and Distributed Computing and Systems*, Dallas, Texas, December 2011.
16. Adaptive Information Coding for Secure and Reliable Wireless Telesurgery Communication, M.E. Tozal, Y. Wang, E. Al-Shaer, K. Sarac, B. Thuraisingham, B.-T. Chu, *The First International Workshop on Cyber-Physical Networking Systems*, Shanghai, China, April 15, 2011.
17. Relay Assignment in AMT-based Multicast Content Distribution, S. Patel, K. Sarac, R. Chandrasekaran, T. Korkmaz, N. Mittal, *9th Annual Conference on Communication Networks and Services Research Conference*, Ottawa, Ontario, Canada, May 2011.
18. TraceNET: An Internet Topology Data Collector, M.E. Tozal and K. Sarac, *ACM IMC 2010*, Melbourne, Australia, November 2010.
19. SKAIT: A Parameterized Key Assignment Scheme for Wireless Networks, R. Novales, N. Mittal, and K. Sarac, *International Symposium on Parallel and Distributed Computing*, Istanbul, Turkey, July 2010.
20. Characterizing Link and Path Reliability in Large-Scale Wireless Sensor Networks, T. Korkmaz and K. Sarac, *IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMOB)*, Niagara Falls, Canada, October, 2010.
21. ODon: An On-Demand Security Overlay for Mission-Critical Applications, J. Kurian, A. Kulkarni, H. Vu, and **K. Sarac**, *Proceedings of IEEE ICCCN Conference*, San Francisco, CA, USA, August 2009.
22. Analyzing Router Responsiveness to Measurement Probes, M. Gunes and **K. Sarac**, *Passive and Active Measurement Conference*, Seoul, Korea, April 2009.
23. A SIP Security Testing Framework, H. Srinivasan and **K. Sarac**, *IEEE CCNC, Security for Consumer Electronics Communications Track*, Las Vegas, NV, USA, January 2009.
24. Wormeros: A New Framework for Defending Against Wormhole Attacks on Wireless Ad Hoc Networks, H. Vu, A. Kulkarni, **K. Sarac**, N. Mittal, *International Conference on Wireless Algorithms, Systems and Applications*, Dallas, TX, USA, October, 2008.
25. A Security Framework for Service Overlay Networks: Access Control, J. Kurian and **K. Sarac**, *Proceedings of IEEE BroadNETs Conference*, London, UK, September 2008.
26. Resolving Anonymous Routers in Internet Topology Measurement Studies, M. Gunes and **K. Sarac**, *Proceedings of IEEE INFOCOM*, pp.1076-1084, Phoenix, AZ, USA, April 2008.
27. Inferring Subnets in Router-Level Topology Collection Studies, M. Gunes and **K. Sarac**, *Proceedings of ACM/USENIX Internet Measurement Conference*, pp. 203-208, San Diego, CA, USA, October 2007.
28. Provider Provisioned Overlay Networks and Their Utility in DoS Defense, J. Kurian and **K. Sarac**, *Proceedings of IEEE Globecom*, pp. 474-479, Washington DC, USA, November 2007.
29. Importance of IP Alias Resolution in Sampling Internet Topologies, M. Gunes and **K. Sarac**, *Proceedings of IEEE Global Internet Symposium*, pp. 19-24, Anchorage, AK, USA, May 2007.
30. Impact of Alias Resolution in *traceroute*-based Sample Network Topologies, M. Gunes, N. Nielsen, and **K. Sarac**, *Passive and Active Measurement Conference*, pp.260-264, Louvain-la-neuve, Belgium, April 2007.
31. Defending Network-Based Services Against Denial-of-Service Attacks, J. Kurian, **K. Sarac**, and K. Almeroth, *Proceedings of IEEE ICCCN Conference*, pp. 17-22, Arlington, VA, USA, October 2006.
32. Toward a More Practical Marking Scheme for IP Traceback, C. Gong and **K. Sarac**, *Proceedings of IEEE BroadNETs General Symposium*, pp. 1-10, San Jose, CA, USA, October 2006.
33. FOnet: A Federated Overlay Network for DoS Defense in the Internet (A Position Paper), J. Kurian and **K. Sarac**, *Proceedings of IEEE Global Internet Symposium*, pp. 83-88, Barcelona, Spain, April 2006.
34. Variable Power Broadcasting in Ad Hoc Networks, A. Chiganmi, **K. Sarac**, and R. Prakash, *Proceedings of IEEE ICC, Wireless Ad Hoc and Sensor Networks Symposium*, pp. 3856-3861, Istanbul, Turkey, June 2006.
35. Analytical IP Alias Resolution, M. Gunes and **K. Sarac**, *Proceedings of IEEE ICC, General Symposium*, pp. 459-464, Istanbul, Turkey, June 2006.
36. Cluster Based Approaches for End-to-End Complete Feedback Collection in Multicast, M. Baysan and **K. Sarac**, *Proceedings of IEEE International Performance Computing and Communications Conference*, pp. 33-40, Phoenix, AZ, USA, April 2006.

37. Single Packet IP Traceback in AS-level Partial Deployment Scenario, C. Gong, T. Le, T. Korkmaz, and **K. Sarac**, *Proceedings of IEEE GLOBECOM 2005*, 5 pages, St. Louis, MO, USA, November/December 2005.
38. Intersection Characteristics of End-to-End Internet Paths and Trees, S. Bilir, **K. Sarac**, and T. Korkmaz, *Proceedings of IEEE International Conference on Network Protocols (ICNP)*, pp. 378-287, Boston, MA, USA, November 2005.
39. Receiver-Controlled Communication: A Silver Bullet to DoS Attacks?, C. Gong and **K. Sarac**, *Proceedings of IEEE Emerging Technologies Conference*, 4 pages, Richardson, TX, USA, September 2005.
40. Facilitating Robust Multicast Group Management, A. Mazumder, K. Almeroth and **K. Sarac**, *Proceedings of ACM International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV)*, pp. 183-188, Skamania, WA, USA, June 2005.
41. IP Traceback Based on Packet Marking and Logging, C. Gong and **K. Sarac**, *Proceedings of IEEE International Conference on Communication (ICC)*, pp. 1043-1047, Seoul, Korea, May 2005.
42. Load Balancing for Reliable Multicast, C. Gong, O. Daescu, R. Jothi, B. Raghavachari, and **K. Sarac**, *Proceedings of 3rd LASTED International Conference on Communications, Internet, and Information Technology (CIIT)*, pp. 86-91, St. Thomas, US Virgin Islands, USA, November 2004.
43. SSM-Ping: A Ping Utility for Source Specific Multicast, P. Namburi, **K. Sarac**, and K. Almeroth, *Proceedings of 3rd LASTED International Conference on Communications, Internet, and Information Technology (CIIT)*, pp. 63-68, St. Thomas, US Virgin Islands, USA, November 2004.
44. Improving Energy Savings in Power Adaptive Broadcasting in MANETs (short paper), M. Baysan, S. Cowdamachandran, and **K. Sarac**, *Proceedings of IEEE BroadNets Wireless Networking Symposium*, pp. 745-747, San Jose, CA, USA, October 2004.
45. End User Level Classification of Multicast Reachability Problems, P. Namburi and **K. Sarac**, *Proceedings of IEEE Workshop on End-to-End Monitoring Techniques and Services (E2EMON)*, pp. 10-15, San Diego, CA, USA, October 2004.
46. Multicast Session Announcements on top of SSM, P. Namburi and **K. Sarac**, *Proceedings of IEEE International Conference on Communication (ICC)*, pp. 1446-1450, Paris, France, June 2004.
47. Optimal Placement of NAK Suppressing Agents for Reliable Multicast: A Partial Deployment Case, O. Daescu, R. Jothi, B. Raghavachari, and **K. Sarac**, *Proc. 19th ACM Symposium on Applied Computing (SAC)*, pp. 334-338, Nicosia, Cyprus, March 2004.
48. SSM Extensions: Network Layer Support for Multiple Senders in SSM, P. Namburi, **K. Sarac**, and K. Almeroth, *Proceedings of IEEE International Conference on Computer Communication Networks (ICCCN)*, pp. 74-80, Dallas, TX, USA, October 2003.
49. Providing Scalable Many-to-One Feedback in Multicast Reachability Monitoring Systems, **K. Sarac** and K. Almeroth, *Proceedings of IFIP/IEEE International Conference on Management of Multimedia Networks and Services (MMNS)*, pp. 256-270, Chicago, IL, USA, October 2001.
50. Scalable Techniques for Discovering Multicast Tree Topology, **K. Sarac** and K. Almeroth, *Proceedings of ACM International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV)*, pp. 73-81, Port Jefferson, NY, USA, June 2001.
51. Monitoring Reachability in the Global Multicast Infrastructure, **K. Sarac** and K. Almeroth, *Proceedings of IEEE International Conference on Network Protocols (ICNP)*, pp. 141-150, Osaka, Japan, November 2000.
52. Supporting the Need for Inter-Domain Multicast Reachability, **K. Sarac** and K. Almeroth, *Proceedings of ACM International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV)*, pp. 230-239, Chapel Hill, NC, USA, June 2000.
53. Iterated DFT Based Techniques for Join-Size Estimation, **K. Sarac**, O. Egecioglu, and A. El-Abadi, *Proceedings of Conference on Information and Knowledge Management (CIKM)*, pp. 348-355, Bethesda, MD, USA, November 1998.

## Standardization Documents



1. RTP Control Protocol Extended Reports (RTCP XR), K. Almeroth, R. Caceres, A. Clark, R. Cole, N. Duffield, T. Friedman, K. Hedayat, **K. Sarac**, and M. Westerlund, *Internet Engineering Task Force (IETF)*, **RFC 3611**, November 2003.
2. MPing: A Ping Utility for IP Multicast, **K. Sarac** and K. Almeroth, *Internet Engineering Task Force (IETF)*, Internet Draft, January 2004.
3. Tracetree: A Utility to Discover Multicast Tree Topology in the Network, **K. Sarac** and K. Almeroth, *Internet Engineering Task Force (IETF)*, Internet Draft, December 2001.

## Other Writings

1. Defending Multicast Against State Overload Attacks, J. Kurian and **K. Sarac**, *South Central Information Security Symposium*, Houston, TX, USA, April 2006.
2. Log-based IP Traceback in AS-Level Partial Deployment Scenario, C. Gong, T. Le, T. Korkmaz, and **K. Sarac**, *South Central Information Security Symposium*, Austin, TX, USA, April 2005.
3. FONet: A Federated Overlay Network for DoS Defense in the Internet (a poster presentation), J. Kurian and **K. Sarac**, *IEEE International Conference on Network Protocols (ICNP)*, Boston, MA, USA, November 2005.
4. IP Traceback with Packet Marking and Logging, C. Gong and **K. Sarac**, *South Central Information Security Symposium*, Houston, TX, USA, April 24, 2004.
5. SSM-Based Receiver-Controlled Communication in the Internet, **K. Sarac**, *South Central Information Security Symposium*, Denton, TX, April 2003.
6. Monitoring Multicast Service in the Internet, **K. Sarac**, *IEEE Emerging Telecommunication Technologies Conference (ETTTC)*, Dallas, TX, USA, September 2002.
7. Supporting Multicast Management Using the Multicast Reachability Monitor (MRM) Protocol, **K. Sarac**, K. Almeroth, and L. Wei, *Technical Report in Computer Science*, UC Santa Barbara, TR2000-26, 2000.

## Invited or Refereed Talks/Presentations to Professional Meetings and Seminars

### Invited Talks and Seminars

1. Internet IPv6 Topology Mapping, 2012 TXv6TF Summit, Richardson, Texas, November 19, 2012.
2. Tracenet: An Internet Topology Data Collector, Colloquium talks in Bilkent University, Ankara, Turkey, and in Middle East Technical University, Ankara, Turkey in December 2010.
3. Challenges in Building Internet Topology Maps from traceroute-collected Path Traces, invited talk at DIMACS/DyDAn Workshop on Internet Tomography, Rutgers University, May 2008.
4. Resolving IP Aliases in Building Traceroute-Based Internet Maps, seminar presentation at Koc University, Istanbul, Turkey, May 2007.
5. Resolving IP Aliases in Building Traceroute-Based Internet Maps, seminar presentation at Fatih University, Istanbul, Turkey, May 2007.
6. Resolving IP Aliases in Building Traceroute-Based Internet Maps, seminar presentation at Southern Methodist University, April 2007.
7. Multicast Monitoring: Supporting a Robust Multicast Service in the Network, seminar presentation at Computer Science Department, University of Pittsburgh, March 2002.
8. Multicast Monitoring: Supporting a Robust Multicast Service in the Network, seminar presentation at Computer Science Department, Portland State University, March 2002.

9. Multicast Monitoring: Supporting a Robust Multicast Service in the Network, seminar presentation at Computer Science Department, University of Texas San Antonio, February 2002.
10. Multicast Monitoring: Supporting a Robust Multicast Service in the Network, seminar presentation at Computer Science Department, University of Texas Dallas, February 2002.
11. Multicast Monitoring: Supporting a Robust Multicast Service in the Network, seminar presentation at Computer Science Department, University of Georgia, February 2002.
12. Multicast Monitoring: Supporting a Robust Multicast Service in the Network, seminar presentation at Computer Science Department, University of Oregon, February, 2002.

Presentations to Professional Meetings:

1. Heuristics for 2-Coverage Multi Point Relay Problem in Wireless Ad Hoc and Sensor Networks, *Workshop on Green Networks (GreenNet)*, Tempe, AZ, May 2016.
2. An Experimental Study on Inter-domain Routing Dynamics using IP-level Path Traces, *IEEE LCN*, Clearwater Beach, FL, October 2015.
3. Panelist at NSF United States / Middle East Workshop on Trustworthiness in Emerging Distributed Systems and Networks, Koc University, Istanbul, Turkey, June 4-6, 2012.
4. Panelist at the Fifth Annual Workshop on Information Assurance Research & Education Information Assurance Center at Arizona State University, April 25, 2012.
5. TraceNET: An Internet Topology Data Collector, M.E. Tozal and K. Sarac, *ACM IMC 2010*, Melbourne, Australia, November 2010.
6. SKAIT: A Parameterized Key Assignment Scheme for Wireless Networks, R. Novales, N. Mittal, and K. Sarac, *International Symposium on Parallel and Distributed Computing*, Istanbul, Turkey, July 2010.
7. A SIP Security Testing Framework, H. Srinivasan and K. Sarac, *IEEE CCNC, Security for Consumer Electronics Communications Track*, Las Vegas, NV, USA, January 2009.
8. A Security Framework for Service Overlay Networks: Access Control, presentation at IEEE BroadNETs Conference, London, UK, September 2008.
9. Resolving Anonymous Routers in Internet Topology Measurement Studies, presentation at IEEE INFOCOM Conference, Phoenix, AZ, USA, April 2008.
10. Variable Power Broadcasting in Ad Hoc Networks, presentation at IEEE ICC, Wireless Ad Hoc and Sensor Networks Symposium, Istanbul, Turkey, June 2006.
11. Analytical IP Alias Resolution, presentation at IEEE ICC, General Symposium, Istanbul, Turkey, June 2006.
12. Intersection Characteristics of End-to-End Internet Paths and Trees, presentation at IEEE International Conference on Network Protocols (ICNP), Boston, MA, USA, Nov 2005.
13. IP Traceback Based on Packet Marking and Logging, Presentation at IEEE ICC, Seoul, Korea, May 2005.
14. End User Level Classification of Multicast Reachability Problems, presentation at E2EMON Workshop, San Diego, CA, USA, October 2004.
15. Providing Scalable Many-to-One Feedback in Multicast Reachability Monitoring Systems, presentation at MMNS Conference, Chicago, IL, USA, October 2001.
16. Scalable Techniques for Discovering Multicast Tree Topology, presentation at NOSSDAV Workshop, Port Jefferson, NY, USA, June 2001.
17. SDR Global Session Monitoring Effort, presentation at Mbone Deployment Working Group, IETF Meeting, Minneapolis, MN, USA, March 1999.
18. Iterated DFT Based Techniques for Join Size Estimation, presentation at CIKM Conference, Bethesda, MD, USA, November 1998.

**Departmental, College and University Committees**

- Co-chair, Texas Security Awareness Week Event (TexSAW) (2011 to 2020 UT Dallas)

- Member, UT Dallas Information Security Committee Member (current)
- Member, UT Dallas Broader Impact Committee Member (current)
- Chair, CS Department TA Assignment Committee (current)
- Director of Information Assurance Education Programs at CS Department (current)
- Member, CS Search Committee (current)
- Member, CS Publicity Committee
- Chair, CS Publicity Committee
- Member, Departmental Equipment Committee.
- Member, Departmental PhD Committee.
- Member, IAB member for Information Assurance and Cyber Security Charter at Jonsson School.
- Member, IAB member of Telecommunication Engineering Program at Jonsson School.

## **Service to Professional Societies and Organizations**

- **Journal Editorship**
  - *Area Editor*, Ad Hoc Networks Journal (Elsevier Science) (January 2008 – 2019).
- **Conference Organization**
  - *General Chair*, 29th IEEE International Conference on Network Protocols (ICNP), Dallas, TX, November 2021.
  - *TPC Co-Chair*, IEEE Workshop on End-to-End Monitoring Techniques and Services (E2EMON), Munich, Germany, May 2007.
  - *TPC Co-Chair*, Special Track on Computer Networks (CN), ACM Symposium on Applied Computing (SAC), Nicosia, Cyprus, March 2004.
  - *Publication Chair*, IEEE ICNP Conference, Princeton, NJ, USA, October 2009.
  - *Publication Chair*, IEEE ICNP Conference, Orlando, FL, USA, October 2008.
  - *Publicity Committee Co-Chair*, IEEE ICNP Conference, Santa Barbara, CA, USA, November 2006.
  - *Workshop Co-Chair*, IEEE International Conference on Pervasive Services (ICPS), Santorini, Greece, July 2005.
  - *Session Chair*, Fifth International Conference on Broadband Communications, Networks and Systems, London, UK, September 2008.
  - *Session Chair*, IEEE International Conference on Communication (ICC), Wireless Ad Hoc and Sensor Networks Symposium, Istanbul, Turkey, June 2006.
  - *Session Chair*, Technical Session on Path Monitoring, Workshop on End-to-End Monitoring Techniques and Services (E2EMON), San Diego, CA, USA, October 2004.
- **Technical Program Committees**
  - IEEE ICNP Conference, Chicago, IL, USA, October 2019.
  - IEEE ICNP Conference, Cambridge, UK, September 2018.
  - IEEE ICNP Conference, Canada, November 2017.
  - IEEE ICNP Conference, Singapore, November 2016.
  - IEEE LCN 2012, 2013, 2014, 2015.
  - 12th IFIP Networking Conference, Brooklyn, NY, USA, May 2013.

- The 5th International Workshop on Traffic Monitoring and Analysis, Turin, Italy, April 2013.
  - IEEE ICCCN 2012, Munich, Germany, July, 2012.
  - IEEE ICCCN, ISA Track, Maui, Hawaii, August 2011.
  - The 9th ACS/IEEE International Conference on Computer Systems and Applications, Sharm El Shaikh, Egypt, June 2011.
  - IEEE International Conference on Network Protocols (ICNP), Kyoto, Japan, October, 2010.
  - Smart Grid Networking Infrastructure Workshop, in conjunction with IEEE LCN, Denver, CO, October 2010.
  - IEEE ICCCN, Internet Services, Architectures and Protocols Track, Zurich, Switzerland, August, 2010.
  - IEEE ICCCN, Peer-to-Peer Track, Zurich, Switzerland, August, 2010.
  - Second International Conference on Communication Systems and Networks (COMSNET), Bangalore, India, January, 2010.
  - IEEE International Conference on Network Protocols (ICNP), Princeton, NJ, USA, October 2009.
  - IEEE ICCCN, Track on Network Architecture and Protocols, San Francisco, CA, USA, August 2009.
  - IEEE ICCCN, Track on Internet Services, Systems and Applications, San Francisco, CA, USA, August 2009.
  - IEEE International Conference on Network Protocols (ICNP), Orlando, FL, USA, October 2008.
  - IEEE Workshop on End-to-End Monitoring Techniques and Services (E2EMON), Salvador, Brazil, April 2008.
  - IEEE ICCCN, Multimedia Networking Track, St. Thomas, Virgin Islands, USA, August 2008.
  - IEEE ICCCN, Future Internet Architectures and Protocols Track, St. Thomas, Virgin Islands, USA, August 2008.
  - IEEE Globecom, Ad-hoc and Sensor Networking Symposium, Washington, DC, USA, November 2007.
  - IEEE International Conference on Network Protocols 2007 (ICNP), Beijing, China, October 2007.
  - IEEE International Conference on Network Protocols 2006 (ICNP), Santa Barbara, CA, USA, November 2006.
  - IEEE Communications Society/CreatNet SecureComm, Workshop on Enterprise Network Security, Baltimore, MD, USA, August 2006.
  - International Conference on Wireless Algorithms, Systems, and Applications (WASA 2006), Xi'an, China, August 15-18, 2006.
  - IEEE International Conference on Pervasive Services 2006 (ICPS), Lyon, France, June 2006.
  - IEEE Workshop on End-to-End Monitoring Techniques and Services (E2EMON), Vancouver, Canada, April 2006.
  - IEEE International Conference on Communication - General Symposium (ICC'06 General Symposium), Istanbul, Turkey, June 2006.
  - IEEE Workshop on End-to-End Monitoring Techniques and Services (E2EMON), Nice-Acropolis, Nice, France, May 2005.
  - International Conference on Web Information Systems and Technologies, Miami, FL, USA, May 2005.
  - The 3<sup>rd</sup> IASTED International Conference on Communications, Internet, and Information Technology, St. Thomas, US Virgin Islands, November 2004.
  - IADIS WWW/Internet Conference, Alverage, Portugal, November 2003.
- **Refereeing for Journals**

- IEEE/ACM Transactions on Networking
- IEEE Transactions on Mobile Computing
- IEEE Transactions on Dependable and Secure Computing
- IEEE Networks Magazine
- Elsevier Science Computer Networks Journal
- Elsevier Science Ad Hoc Networks Journal
- Elsevier Science Computer Communications Journal
- ACM Computer Communications Review
- Software Practice and Experience
- Journal of Multimedia Networks and Systems
- Journal of Network and System Management
- Electronics and Telecommunications Research Institute (ETRI) Journal, Korea
- International Journal on Network Security
- **Grant Proposal Review Duties**
  - NSF Programs (2020, 2019, 2017, 2016, 2015, 2014, 2013, 2012, 2011)
  - DHS Programs (2020, 2016)
  - BSF – United States – Israel Bi-national Science Foundation (2007)
  - ISF – Israel Science Foundation (2010)
  - Kuwait University Research Sector Program (2020)
- **Technical Staff Member and Student Volunteer**
  - Technical staff member for MBone broadcast of technical sessions at 44<sup>th</sup>, 46<sup>th</sup>, 48<sup>th</sup>, 52<sup>nd</sup>, and 55<sup>th</sup> Internet Engineering Task Force (IETF) meetings.
  - Student volunteer at IEEE Advances in Digital Libraries Conference, Santa Barbara, CA, USA, 1998.
- **Other Service**
  - External Program Evaluator, BS in CS Degree Program, Nazarbayev University, Kazakhstan, 2020.