Jasleen Kaur

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University of North Carolina at Chapel Hill
Chapel Hill, NC 27599-3175

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Education

Ph.D., Computer Sciences — August 2002
University of Texas at Austin — Austin, Texas

Thesis Title: Scalable Network Architectures for Providing Per-flow Service Guarantees
Advisor: Prof. Harrick M. Vin

M.S., Computer Sciences — May 1999
University of Texas at Austin — Austin, Texas

B.Tech., Computer Science and Engineering — May 1997
Indian Institute of Technology, Kanpur — Kanpur, India

Professional Experience

University of North Carolina at Chapel Hill	*Associate Professor*	July 2009 – *present*
University of North Carolina at Chapel Hill	*Assistant Professor*	July 2002 – June 2009
University of Texas at Austin, TX	*Research Assistant*	Aug 1999 – July 2002
IBM T.J. Watson Research Labs, NY	*Summer Intern*	May 1999 – Aug 1999
AT&T Research Labs, NJ	*Summer Intern*	May 1998 – Aug 1998
Aeronautical Development Est., India	*Summer Employee*	May 1996 – Aug 1996

Honors & Awards

- *Google Faculty Research Award, 2020*.
- *National Science Foundation CAREER Award, 2004*.
- *Junior Faculty Development Award, 2004*, University of North Carolina at Chapel Hill, NC.
- *James C. Browne Fellowship, 2001-02*, Computer Sciences, University of Texas at Austin, Texas.
- *MCD Fellowship, 1997-99*, University of Texas at Austin, Texas.
- *Motorola Student of the Year Gold Medal, 1997*, Indian Institute of Technology, Kanpur, India.
- *Summer Research Fellowship, Summer 1996*, Aeronautical Development Establishment, India.
- *Academic Merit Award, 1993-94*, Indian Institute of Technology, Kanpur, India.

Bibliography

*(According to Google Scholar, these publications had more than **1600 citations** in Spring 2023).*

Book Chapter

- A. Srinivasan, P. Holman, J. Anderson, S. Baruah, and J. Kaur, "Multiprocessor Scheduling in Processor-based Router Platforms: *Issues and Ideas*", in Network Processors Design: *Issues and Practices*, Volume 2, pages 48-62, Morgan Kaufman, 2003.

Refereed Journal Publications

(Impact factors are the latest 3-year average values according to the ISI Web of Knowledge).

- R. Lovewell, Q. Yin, T. Zhang, J. Kaur, and F.D. Smith, "The Packet Scale Paradigm", *in the IEEE/ACM Transactions on Networking*, volume 25, issue 1, pages 306-319, Feb 2017. **2.186 impact factor**

- M.C. Weigle, L. Cheng, J. Kaur, and V. Kulkarni, "Generalized Stochastic Performance Models for Loss-based Congestion Control", *in the Computer Communications Journal*, volume 33, issue 4, pages 513-525, March 2010.

- R. Kumar and J. Kaur, "Practical Beacon Placement for Link Monitoring Using Network Tomography", *in the IEEE Journal on Selected Areas in Communication **(JSAC)***, special issue on *Sampling the Internet: Techniques and Applications*, volume 24, number 12, pages 2196-2209, Dec 2006. **2.104 impact factor**.

- S. Rewaskar, J. Kaur, and F.D. Smith, "A Passive State-machine Based Approach for Reliable Estimation of TCP Losses", *in the ACM SIGCOMM Computer Communications Review **(CCR)***, volume 36, issue 3, pages 51-64, July 2006. **0.536 impact factor**.

Refereed Conference Publications

- E.H. Choi, J. Kaur, V. Pipiras, N. Antunes, Q. Hong, "Tackling Generic Flows in Network Traffic Classification", *under submission*, December 2024.

- M.A. Qureshi, J. Yan, Y. Cheng, S.H. Yeganeh, Y. Seung, N. Cardwell, W.d. Bruijn, V. Jacobson, J. Kaur, D. Wetherall, A. Vahdat, "Fathom: Understanding Datacenter Application Network Performance", *in the proceedings of the 37th ACM **SIGCOMM** Conference*, New York City, NY, September 2023.

- G. Kaur, K. Jordan, and J. Kaur, "Using Foundational CS1 Curricula for Middle School & Early High School Computer Programming Education", *in the Proceedings of the 54th ACM Technical Symposium on Computer Science Education (**SIGCSE**)*, Toronto, Ontario, Canada, March 2023.

- G. Kaur, K. Jordan, and J. Kaur, "Can CS1 Curricula Be Used for Middle School Computer Programming Education?", (extended abstract) *in the Proceedings of the 53rd ACM Technical Symposium on Computer Science Education (**SIGCSE**)*, Providence, RI, March 2022.

- H.F. Alan and J. Kaur, "Client Diversity Factor in HTTPS Webpage Fingerprinting", *in Proceedings of the 9th ACM Conference on Data and Application Security and Privacy (CODASPY)*, Dallas, TX, 12 pages, March 2019. **23.5% acceptance ratio**.

- B. Islam, Md T. Islam, J. Kaur, and S. Nirjon, "LoRaIn: Making a Case for LoRa in Indoor Localization", *in Proceedings of the 2019 IEEE International Conference on Pervasice Computing and Communications (**PerCom**)*, March 2019. **19.8% acceptance ratio**.

- J. Yan and J. Kaur, "Feature Selection for Website Fingerprinting", *in Proceedings on Privacy Enhancing Technologies Symposium (**PETS**)*, Spain, 20 pages, July 2018. **15% acceptance ratio**.

- Q. Yin, J. Kaur, and F.D. Smith "TCP Rapid: From Theory to Practice", *in Proceedings of the 36th IEEE **INFOCOM***, Atlanta, GA, 9 pages, May 2017. **20.9% acceptance ratio**.

- H.F. Alan and J. Kaur, "Can Android Applications Be Identified Using Only TCP/IP Headers of Their Launch Time Traffic?", *in Proceedings of the ACM Conference on Security and Privacy in Wireless and Mobile System Engineering **(WiSec)***, Darmstadt, Germany, 6 pages, July 2016. **28% acceptance ratio**.

- Q. Yin and J. Kaur, "Can Machine Learning Benefit Bandwidth Estimation at Ultra-high Speeds?", *in Proceedings of the Passive and Active Measurements Conference **(PAM)***, Crete, Greece, 12 pages, April 2016.

- S. Sanders, G. Sanka, J. Aikat, and J. Kaur, "The Influence of Client Platform on Web Page Content: Measurements, Analysis, and Implications", *in Proceedings of the 16th International Conference on Web Information System Engineering **(WISE)***, Miami, FL, November 2015.

- S. Sanders and J. Kaur, "A Graph Theoretical Analysis of the Web Using DNS Traffic Traces", *in Proceedings of the IEEE 23rd International Symposium on Modelling, Analysis and Simulation of Computer and Telecommunication Systems **(MASCOTS)***, Atlanta, GA, October 2015. **24% acceptance ratio**.

- S. Sanders and J. Kaur, "Can Web Pages Be Classified Using Anonymized TCP/IP Headers?", *in Proceedings of the 34th IEEE **INFOCOM***, Hong Kong, 9 pages, April 2015. **19% acceptance ratio**.

- Q. Yin, J. Kaur, and F.D. Smith, "Can Bandwidth Estimation Tackle Noise at Ultra-high Speeds?", *in Proceedings of IEEE International Conference on Network Protocols **(ICNP)***, Raleigh, NC, 12 pages, Oct 2014. **20% acceptance ratio**.

- S. Sanders and J. Kaur, "On the Variation in Web Page Download Traffic Across Different Client Types", *in Proceedings of the Ph.D. Forum, IEEE International Conference on Network Protocols (ICNP)*, Raleigh, NC, 3 pages, Oct 2014. **Best PhD Forum Paper.**

- R. Lovewell and J. Kaur, "Impact of Cross-traffic Burstiness on the Packet-scale Paradigm", *in Proceedings of the 18th IEEE Workshop on Local and Metropolitan Area Networks (LANMAN)*, Chapel Hill, NC, 6 pages, Oct 2011.

- E. Gavaletz and J. Kaur, "Decomposing RTT-Unfairness in Transport Protocols", *in Proceedings of the 17th IEEE Workshop on Local and Metropolitan Area Networks (LANMAN)*, Long Branch, NJ, 6 pages, May 2010.

- V. Konda and J. Kaur, "RAPID: Shrinking the Congestion Control Timescale", *in Proceedings of the 28th IEEE **INFOCOM***, Rio de Janeiro, Brazil, 9 pages, April 2009. **19% acceptance ratio**.

- R. Kumar and J. Kaur, "Towards a Queue Sensitive Transport Protocol", *in Proceedings of the 27th IEEE International Performance Computing and Communications Conference (IPCCC)*, Austin, TX, 8 pages, Dec 2008.

- S. Rewaskar, J. Kaur, and F.D. Smith, "A Performance Study of Loss Detection/Recovery in Real-world TCP Implementations", *in Proceedings of IEEE International Conference on Network Protocols **(ICNP)***, Beijing, China, 10 pages, Oct 2007. **14% acceptance ratio**.

  Empirical results from this paper are being used to inform the loss detection mechanisms in the recently-developed Linux DCCP CCID-2 protocol. Gerrit Renker (University of Aberdeen) is leading this effort.

- A. Shriram and J. Kaur, "Empirical Evaluation of Techniques for Measuring Available Bandwidth", *in Proceedings of the 26th IEEE **INFOCOM***, Anchorage, AK, 9 pages, May 2007. **18% acceptance ratio**.

- A. Shriram and J. Kaur, "Empirical Study of the Impact of Sampling Timescales and Strategies on Measurement of Available Bandwidth", *in Proceedings of the Seventh Passive and Active Measurement Conference **(PAM)***, Adelaide, Australia, 10 pages, March 2006. **25% acceptance ratio**.

- S. Rewaskar, J. Kaur, and D. Smith, "Accuracy of Probing Techniques in Estimating TCP Loss Rates", (extended abstract) *in Proceedings of ACM **SIGCOMM***, Pisa, Italy, 2 pages, September 2006.

- V. Sawant and J. Kaur, "A Peer-to-Peer Architecture to Enable Versatile Lookup System Design", *in Proceedings of the 2nd IEEE International Workshop on Networking Meets Databases (NetDB)*, Atlanta, GA, 6 pages, April 2006.

- S. Rewaskar, J. Kaur, and D. Smith, "A Passive State-Machine Based Approach for Reliable Estimation of TCP Losses", (extended abstract) *in Proceedings of the Seventh Passive and Active Measurement Conference **(PAM)***, Adelaide, Australia, 2 pages, March 2006.

- V. Sawant and J. Kaur, "Supporting Arbitrary Queries in Peer-to-Peer Networks using Hybrid Routing", (extended abstract) *in Proceedings of the 20th ACM Symposium on Operating Systems Principles **(SOSP)***, Brighton, UK, 2 pages, October 2005.

- R. Kumar and J. Kaur, "Efficient Beacon Placement for Network Tomography", *in Proceedings of the ACM SIGCOMM Internet Measurement Conference **(IMC)***, Sicily, Italy, 6 pages, October 2004. **24% acceptance ratio**.

- W. Jin, J. Chase, and J. Kaur, "Interposed Proportional Sharing for a Storage Service Utility", *in Proceedings of the ACM Sigmetrics - Performance* ***(SIGMETRICS)***, New York, 12 pages, June 2004. **12% acceptance ratio**.

- S. Rewaskar and J. Kaur, "Testing the Scalability Limits of Overlay Routing Infrastructures", *in Proceedings of the Fifth Passive and Active Measurements Workshop* ***(PAM)***, Juan-les-Pins, France, published in the Springer Lecture Notes in Computer Science Series, 10 pages, April 2004. **17% acceptance ratio**.

- J. Aikat, J. Kaur, F.D. Smith, and K. Jeffay, "Variability in TCP Round-trip Times", *in Proceedings of the ACM SIGCOMM Internet Measurement Conference* ***(IMC)***, Miami, FL, 6 pages, October 2003. **29% acceptance ratio**.

- A. Srinivasan, P. Holman, J. Anderson, S. Baruah, and J. Kaur, "Multiprocessor Scheduling in Processor-based Router Platforms: *Issues and Ideas*", *in the Second Workshop on Network Processors*, Anaheim, CA, pages 48-62, February 2003.

- A. Shriram and J. Kaur, "Identifying Bottleneck Links Using Distributed End-to-end Available Bandwidth Measurements", (extended abstract) *in the First ISMA Bandwidth Estimation Workshop (BEst)*, San Diego, CA, 2 pages, December 2003.

- J. Kaur and H. Vin, "Providing Deterministic End-to-end Fairness Guarantees in Core-stateless Networks", *in Proceedings of the Eleventh ACM/IEEE International Workshop on Quality of Service* ***(IWQoS)***, Monterey, CA, published in Springer-Verlag's Hot Topic Series LNCS 2707, 21 pages, June 2003. **30% acceptance ratio**.

- J. Kaur and H. Vin, "Core-stateless Guaranteed Throughput Networks", *in Proceedings of the 22nd IEEE* ***INFOCOM***, San Francisco, CA, 11 pages, April 2003. **20% acceptance ratio**.

- J. Kaur and H. Vin, "End-to-end Fairness Analysis of Fair Queuing Networks", *in the 23rd IEEE International Real-Time Systems Symposium* ***(RTSS)***, Austin, TX, pages 49-58, December 2002. **29% acceptance ratio**.

- J. Kaur and H. Vin, "Core-Stateless Guaranteed Rate Scheduling Algorithms", *in Proceedings of the 20th IEEE* ***INFOCOM***, Anchorage, AK, pages 1484-1492, April 2001. **23% acceptance ratio**.

- V. Sundaram, A. Chandra, P. Goyal, P. Shenoy, J. Sahni, H. Vin, "Application Performance in the QLinux Multimedia Operating System", *in Proceedings of the Eighth ACM Conference on* ***Multimedia***, Los Angeles, CA, pages 127-136, November 2000. **17% acceptance ratio**.

  The QLinux operating system presented in this paper has been downloaded and used by hundreds of researchers around the world.

- J. Sahni, P. Goyal, and H. Vin, "Scheduling CBR Flows: FIFO or Per-Flow Queuing?" *in Proceedings of the Ninth IEEE International Workshop on Network and Operating System Support for Digital Audio and Video* ***(NOSSDAV)***, Basking Ridge, NJ, pages 13-27, June 1999.

Teaching Record

Student Advising

Ph.D. Advisees

Brendan Massey, *current advisee*.
Research Topic: Online Traffic Classification

Paul Choi, *current advisee*.
Research Topic: Online Traffic Classification

Junhua Yan, Ph.D. 2023.
Thesis Title: Analyzing Data-center Application Performance Via Constraints-based Models

Qianwen Yin, Ph.D. 2018.
Thesis Title: TCP Rapid: From Theory to Practice

Sean Sanders, Ph.D. 2017.
Thesis Title: Techniques for the Analysis of Modern Web Page Traffic Using Anonymized TCP/IP Headers.

Alok Shriram, Ph.D. 2009.
Thesis Title: Efficient Techniques for End-to-end Bandwidth Estimation: Performance Evaluations and Scalable Deployment.

Sushant Rewaskar, Ph.D. 2008.
Thesis Title: Empirical Evaluation of Techniques for Mitigating the Impact of Packet Losses on TCP Performance.

M.S. Advisees

Hasan Faik Alan, M.S. 2020.
Research Topic: Webpage Fingerprinting.

Kevin Wang, M.S. 2016.
Research Topic: Learnability Analysis of Web Page Type from Content.

Roberto Rodriguez, M.S. 2013.
Research Topic: Stability Analysis of the Packet Scale Paradigm.

Alfredo Miranda, M.S. 2013.
Research Topic: Average-case Impact of Burstiness on Bandwidth Estimation.

Rebecca Lovewell, M.S. 2012.
Research Topic: Impact of Burstiness on Bandwidth Estimation.

Eric Gavaletz, M.S. 2012.
Research Topic: Analysis of Simultaneous Bandwidth Probing.

Caitlyn Losee, M.S. 2012.
Research Topic: Implementation Framework for Packet Scale Paradigm.

Chiung-Yi Tseng, M.S. 2011.

Research Topic: Scalable and Per-Flow Gap Generator Based on PSPacer.

Simona Bacanu, M.S. 2010.
Research Topic: Development of Packet-scale Paradigm in NS-2.

Vishnu Konda, M.S. 2009.
Research Topic: Adaptive Congestion Control at Fine Timescales.

Ritesh Kumar, M.S. 2008.
Thesis Title: Reducing Router Queues and Internet Latency Using Explicitly-guided Congestion-control Protocols.

Sami Benzaid, M.S. 2008.
Research Topic: High-speed TCP Congestion Control Protocols.

Undergraduate Research Advising

Tobenna Okoli, 2024-present.
Kimberly Brown, 2023-present.
Qianqian Hong, 2023-2024.
John Feshuk, 2021-2022.
Haopeng Huang, 2021-2022.
Zhongrui Chen, 2020.
James Martin, 2014-2015.
Rebecca Lovewell, 2011.
Eric Gavaletz, 2008-2009.

Curriculum Development

- *Computer Architecture*, a graduate-level course in computer architecture that was designed and offered after a gap of nearly 6 years, Spring 2022.
- *Wireless and Mobile Networks*, a new introductory graduate course on the wireless networks and mobile systems, designed in Fall 2010.
- *Networked and Distributed Systems*, a new introductory graduate course on the design of large-scale networks and distributed systems, designed in Fall 2009.
- *Computer Networks*, a new introductory graduate course on the design of computer networks, designed in Fall 2003.
- *Network Transport Protocols*, a new advanced graduate seminar course on the design and evaluation of high-speed Internet transport protocols, designed in Spring 2012.
- *Systems Performance Analysis*, a new advanced undergraduate/graduate course on the performance evaluation of computer systems, designed in Spring 2005.
- *Research Topics in Networking*, a research-focused graduate seminar course on current open issues in networking, designed in Spring 2003.

Classroom Teaching

COMP 431	Internet Services and Protocols	2003-2024
COMP 631	Networked & Distributed Systems	2007-2023
COMP 635	Wireless & Mobile Communications	2010-2024
COMP 740	Computer Architecture	Spring 2022
COMP 410	Data Structures	Spring 2014
COMP 110	Introduction to Programming	Fall 2011
COMP 790	Network Transport Protocols	Spring 2012
COMP 190	Systems Performance Analysis	Spring 2005
COMP 790	Research Topics in Networking	Spring 2003-2006

Research Grants

As Principal Investigator

- *Summer Research Education Program for Promoting Computational Neuroimaging Technology in Alzheimer's Disease (AD) and AD-Related Dementias (ADRD)*, NIH NIA Award (R25AG086105). Co-PI with: Guorong Wu.

  Funding: $\$1,000,000$ over 5 years (04/2024 – 03/2029).

- *Enabling Continual Passive Estimation of Performance of Internet Transfers: Online Measurement and Classification Methods*, NSF IMR Award (2319511). Co-PI: Vladas Pipiras.

  Funding: $\$400,000$ over 3 years (08/2023 – 08/2026).

- *Explanatory Models for Anomalies in Wide-area Datacenter Networks*, Google Faculty Research Award, 2020-2021.

  Funding: $\$60,000$ over 1 year (08/2020 – 07/2021).

- *NSF Student Travel Grant for 2018 SIGCOMM*, NSF CISE NeTS Award (CNS-1833138).

  Funding: $\$25,000$ over 1 year (06/2018 – 05/2019).

- *Web Traffic Monitoring Using Anonymized TCP/IP Traces*, NSF CISE NeTS Award (CNS-1526268).

  Funding: $\$500,000$ over 3 years (10/2016 – 09/2019).

- *Development of an Ultra-high Speed End-to-end Transport Stack Based on the Packet Scale Paradigm*, NSF OCI SDCI Award (OCI-1127413). Co-PI: Don Smith.

  Funding: $\$830,000$ over 3 years (09/2011 – 08/2014).

- *The Packet-Scale Paradigm: Realizing End-to-end Congestion-control for Terabit Networks*, NSF CISE NeTS Award (CNS-1018596).

  Funding: $\$450,000$ over 3 years (07/2010 – 06/2013).

- *Achieving RTT Fairness in Window-based End-to-end Congestion-control Protocols*, NSF REU Supplemental Award (CNS-0347814).

  Funding: $\$8,000$ (Fall 2009).

- *Empirical Evaluation of Router Queue Occupancy at Short-timescales with Internet-derived Traffic Mixes*, NSF REU Supplemental Award.

  Funding: $\$6,000$ (Summer 2008).

- *Re-assessing the Foundations of Internet Transport Protocols*, NSF CAREER Award.

  Funding: $\$500,000$ over 5 years (09/2004 – 08/2009).

As Senior Personnel

- *Tera-Pixels: Using High-resolution Pervasive Displays to Transform Collaboration and Teaching*, NSF CISE Research Infrastructure Award.

  PIs: K. Jeffay, A. Lastra, K. Mayer-Patel, L. McMillan, and F.D. Smith.

  Funding: $\$1,200,000$ over 5 years (09/2003 – 08/2008).

UNC Funding

- *Analysis of a Rate-based Congestion-control Protocol*, UNC College of Arts & Science Associate Professor Support Award.

  Funding: $\$6,000$ (Fall 2009).

- *Modeling TCP Round-trip Times*, University Junior Faculty Development Award.

  Funding: $\$5,000$ (2004).

Professional Service

Conference Organizing Committees

- *Travel Grants Co-chair*, ACM SIGCOMM 2022, Amsterdam, Netherlands, August 2022.
- *Technical Program Co-chair*, the 20th IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (IEEE WOWMOM 2019), Washington DC, June 2019.
- *Travel Grants Co-chair*, ACM SIGCOMM 2018, Budapest, Hungary, August 2018.
- *General Co-chair*, the 22nd IEEE International Conference on Network Protocols (ICNP 2014), Raleigh, NC, October 2014.

- *General Co-chair*, the 18th IEEE Workshop on Local and Metropolitan Area Networks (LANMAN 2011), Chapel Hill, NC, October 2011.
- *Technical Program Co-chair*, the 17th IEEE Workshop on Local and Metropolitan Area Networks (LANMAN 2010), Long Branch, NJ, April 2010.
- *Co-organizer*, the DIMACS/DyDAn Workshop on Internet Tomography, Rutgers University, NJ, May 2008. Organized by J. Kaur, D. Towsley, and W. Willinger.
- *Student Travel Grant Committee*, ACM SIGCOMM 2005, Philadelphia, PA, August 2005.
- *Posters Committee*, ACM SIGCOMM 2004, Portland, OR, August 2004.
- *Publicity Chair*, the 24th IEEE Real-time Systems Symposium (RTSS 2003), Cancun, Mexico, December 2003.

Technical Program Committees & Review Panels

- *Technical Program Committee*, ACM CoNEXT, December 2024.
- *NIH Review Panel*, Fall 2024.
- *Technical Program Committee*, IEEE INFOCOM, May 2024.
- *Program Committee*, the 54th ACM Technical Symposium on Computer Science Education (SIGCSE 2023), March 2023.
- *Program Committee*, the 26th IEEE International Conference on Network Protocols (ICNP 2018), October 2018.
- *Program Committee*, the 25th IEEE International Conference on Network Protocols (ICNP 2017), Toronto, Canada, October 2017.
- *NSF Review Panel*, Fall 2015.
- *NSF Review Panel*, Spring 2013.
- *Program Committee*, the 1st International Conference of the IBM Cloud Academy (ICA CON 2012), Research Triangle Park, NC, April 2012.
- *Program Committee*, E6 Workshop, the 4th International Conference on COMmunication Systems and NETworks (COMSNETS 2012), Bangalore, India, January 2012.
- *NSF Review Panel*, Spring 2011.
- *Program Committee*, the 19th IEEE International Conference on Network Protocols (ICNP 2011), Vancouver, Canada, October 2011.
- *Program Committee*, the 20th IEEE International Conference on Computer Communications and Networks (ICCCN 2011), Maui, Hawaii, July 2011.
- *NSF Review Panel*, Fall 2010.

- *Program Committee*, the 19th IEEE International Conference on Computer Communications and Networks (ICCCN 2010), Zurich, Switzerland, August 2010.
- *Program Committee*, the IEEE Globecom 2010 - Next Generation Networking Symposium (GC10 - NGN), Miami, December 2010.
- *NSF Review Panel*, Spring 2009.
- *Program Committee*, the 18th International Conference on Computer Communications and Networks (ICCCN 2009), San Francisco, August 2009.
- *Program Committee*, the 1st IFIP Traffic Monitoring and Analysis Workshop (TMA), Aachen, Germany, May 2009.
- *Program Committee*, the 16th IEEE Workshop on Local and Metropolitan Area Networks (LANMAN 2008), Cluj-Napoca, Romania, September 2008.
- *Program Committee*, the 17th International Conference on Computer Communications and Networks (ICCCN 2008), St. Thomas, Virgin Islands, August 2008.
- *Program Committee*, the 15th International Conference on Computer Communications and Networks (ICCCN 2006), Arlington, Virginia, October 2006.
- *Program Committee*, the 26th IEEE International Conference on Distributed Computing Systems (ICDCS 2006), Lisboa, Portugal, July 2006.
- *Program Committee*, the 16th International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 2006), Newport, Rhode Island, May 2006.
- *Program Committee*, the ACM Internet Measurement Conference (IMC 2005), New Orleans, LA, Oct 2005.
- *Program Committee*, the 25th IEEE International Conference on Distributed Computing Systems (ICDCS 2005), Columbus, Ohio, June 2005.
- *Program Committee*, the 13th IEEE International Workshop on Quality of Service (IWQoS 2005), Passau, Germany, June 2005.
- *Program Committee*, the 11th ACM/IEEE International Workshop on Quality of Service (IWQoS 2003), Monterey, CA, June 2003.

Journal and Conference Reviewer

- ACM Computer Communication Review.
- ACM Internet Measurement Conference.
- ACM Multimedia.
- ACM SOSP.
- ACM SIGCOMM.
- ACM/IEEE IWQoS.
- Communications of the ACM.

- Computer Communications Journal.
- IEEE/ACM COMSWARE.
- IEEE/ACM Transactions on Networking.
- IEEE Communications Letters.
- IEEE ICCCN.
- IEEE ICDCS.
- IEEE INFOCOM.
- IEEE LANMAN.
- IEEE NOSSDAV.
- IEEE Transactions on Computers.
- IEEE Transactions on Dependable and Secure Computing.
- IEEE Transactions on Mobile Computing.
- IEEE Transactions on Multimedia.
- Journal of Systems and Software.
- SPIE Multimedia Computing and Networking.

Outreach Service

- Mentored the teaching of CS1 curriculum to 58 middle school and high school students over 2021-2023.
- Guest Presentation on "Pythagorean Spirals", McDougle Middle School, Spring 2019.
- Guest Presentation on "Golden Spirals", McDougle Middle School, Fall 2017.

UNC-Chapel Hill Service

- Administrative Board of The Graduate School, 2021 - 2027.
- Academic Policy Committee, Graduate School, 2021 - 2027.
- Data Science @ Carolina, Graduate Curriculum Sub-committee, Provost, Fall 2020.
- Carolina Seminar Panel on "Gender and STEM", November 2018.
- Internal Advisory Committee for the ADVANCE Program at UNC-CH, Fall 2009.

UNC Computer Science Service

- Director of Graduate Studies, July 2017 – *present*.
- Chair, Graduate Studies Committee, July 2017 – *present*.
- Coordinator, Computer Science 8-year External Review, Jan – Dec 2017.
- Coordinator, Triangle Computer Science Distinguished Lecture Series, July 2015 – June 2022.

- Graduate Curriculum and Planning Committee, Aug 2005 – *present*. Current Chair: *Prof. Don Porter*.
- Facilities and Web Committee, Aug 2009 – *present*. Chair: *Prof. Montek Singh*.
- Curriculum and Planning Committee.
  - Aug 2003 – May 2005. Chair: *Prof. Jack Snoeyink*.
  - Aug 2002 – May 2003. Chair: *Prof. Stephen Pizer*.
- Chair Search Committee, Fall 2013 – Spring 2014. Chair: *Prof. Dinesh Manocha*.
- Ad-hoc Committee on Research Areas Classification, Fall 2010. Chair: *Prof. Anselmo Lastra*.
- Load Balancing Committee, Fall 2009. Chair: *Prof. Steve Weiss*.
- Faculty Search Sub-Committee (Security), Spring 2008. Chair: *Prof. Mike Reiter*.
- Ad-hoc Committee on Titles, Fall 2003. Chair: *Prof. Anselmo Lastra*.