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## Education

UNIVERSITY OF MICHIGAN, COMPUTER SCIENCE & ENGINEERING, 1991–96      Ann Arbor, MI  
MSE 1993, PhD Summer 1996 (GPA: 8.4/8.0, 9=A+, 8=A, . . .)  
Thesis: Tailoring router architectures to performance requirements in cut-through networks  
Advisor: Professor Kang G. Shin ([kgshin@eecs.umich.edu](mailto:kgshin@eecs.umich.edu))

PRINCETON UNIVERSITY, ELECTRICAL ENGINEERING, 1987–91      Princeton, NJ  
BSE 1991, with highest honors (GPA: 4.0/4.0)  
Advisor: Professor Niraj Jha ([jha@ee.princeton.edu](mailto:jha@ee.princeton.edu))

## Work experience

PRINCETON UNIVERSITY, COMPUTER SCIENCE DEPARTMENT, FEB 2005–      Princeton, NJ  
Full professor in the computer science department, conducting research in the field of data networking. Affiliated faculty in electrical engineering (May 2006–), the Center for Information Technology Policy (February 2008–), the Princeton Environmental Institute (March 2011–), the Princeton Institute for Computational Science and Engineering (September 2014–), Operations Research and Financial Engineering (February 2022–). Gordon Y. S. Wu Professor in Engineering (July 2012–). Acting department chair (fall 2013), department chair (July 2015–2023), provost (2023–).

AT&T RESEARCH, INTERNET AND NETWORKING SYSTEMS, 1996–2004      Florham Park, NJ  
Technology Leader in the IP Network Management and Performance department. Created techniques for monitoring, traffic engineering, and router configuration deployed in AT&T's backbone networks.

AT&T BELL LABORATORIES, NETWORK SERVICES RESEARCH LAB., JUNE & OCT 1995

AT&T BELL LABORATORIES, MATHEMATICS CENTER, SUMMER 1994      Murray Hill, NJ  
Design and evaluation of efficient hardware architectures for traffic shaping and link scheduling in high-speed ATM (asynchronous transfer mode) networks.

AT&T BELL LABORATORIES, MATHEMATICS CENTER, SUMMER 1991      Murray Hill, NJ  
Development of parallel algorithms for evaluating routing algorithms in circuit-switched networks, with implementation on the MasPar MP-1.

PRINCETON UNIVERSITY, ELECTRICAL ENGINEERING DEPT., FALL 1990      Princeton, NJ  
Teaching assistant for “Computer Structure” (EE317).

AT&T BELL LABORATORIES, MATHEMATICS CENTER, SUMMER 1990      Murray Hill, NJ  
Creation of a quadruple precision floating-point library in C++.

NAVAL RESEARCH LABORATORY, PLASMA PHYSICS LAB., SUMMER 1989      Washington, D.C.  
Design of FORTRAN computer simulations for the VAX and Cray XMP.

## Recognition and honors

- SIGCOMM “Test of Time” Award for “P4: Programming Protocol-Independent Packet Processors” (2024)

- IEEE Alexander Graham Bell Medal (May 2024)
- NSDI'23 Community Award for "Building flexible, low-cost wireless access networks with Magma" (April 2023)
- Runner-up for the Caspar Bowden PET Award for "Experiences Deploying Multi-Vantage-Point Domain Validation at Let's Encrypt" (2022)
- Most Influential Paper of ICFP11 Award for "Frenetic: A Network Programming Language" (2021)
- Runner-up for the Caspar Bowen Award for Outstanding Research in Privacy Enhancing Technologies for "Bamboozling certificate authorities with BGP" (2020)
- National Academy of Sciences (2020)
- SOSR'20 Best Paper Award for "Tracking P4 program execution in the data plane" (2020)
- CRA-E Undergraduate Research Faculty Mentoring Award (2019)
- IEEE Internet Award (2019)
- ACM SIGCOMM Award for Lifetime Contributions (2018)
- Applied Networking Research Prize for "Performance Characterization of a Commercial Video Streaming Service" (2018)
- IEEE Fellow (2018)
- National Academy of Inventors (2017)
- SOSR'17 Best Paper Award for "Concise encoding of flow attributes in SDN switches" (2017)
- NCWIT Harrold and Notkin Research and Graduate Mentoring Award (2017)
- ACM Athena Lecturer Award (2016)
- SOSR'16 Best Paper Award for "CacheFlow: Dependency-aware rule-caching for software-defined networks" (2016)
- Applied Networking Research Prize for "Central control over distributed routing" (2015)
- NSDI'16 Community Award for "An industrial-scale software defined Internet exchange point" (2016)
- N2Women list of "10 Women You Should Know In Networking and Communications" (2015)
- SIGCOMM "Best Paper" Award for "Central control over distributed routing" (2015)
- SIGCOMM "Test of Time" Award for "A clean slate 4D approach to network control and management" (2015)
- NSDI "Test of Time Award" for "Design and implementation of a Routing Control Platform" (2015)
- Applied Networking Research Prize for "Distributed route aggregation on the global network" (selected 2014, presented at IETF-93 in July 2015)
- National Academy of Engineering, elected member (2014)
- GigaOM list of "Ten Cloud Trailblazers" (2013)
- American Academy of Arts & Sciences, elected member (2013)
- NSDI'13 Community Award, for "Composing software-defined networks" (2013)
- NSDI'12 Community Award, honorable mention, for "Serval: An end-host stack for service-centric networking" (2012)
- SIGMETRICS "Test of Time" award (2011)
- SIGMETRICS "Best Student Paper" award (2011)
- Princeton Graduate Mentoring Award (2011)
- ACM Fellow (2008)
- Princeton Engineering commendation list for outstanding teaching (COS 461 spring 2006, COS 461 spring 2008, COS 217 spring 2008)
- ACM Grace Murray Hopper Award for outstanding young computer professional of the year (2005)
- University of Michigan Recent Engineering Graduate Award (2005)
- MIT Technology Review TR-100 list of the top 100 innovators under the age of 35 (2004)
- Senior Member of the IEEE (2001)
- INFOCOM distinguished program committee member (2000)

- Intel Foundation graduate fellowship (1995–1996)
- Distinguished Achievement Commendation for U. Michigan CSE graduate student (1995)
- Rackham graduate fellowship for U. Michigan graduate students (1994–1995)
- Co-author of publication chosen as “best paper” in *Proc. Performance* (1993)
- Office of Naval Research graduate fellowship (1991–1994)
- National Science Foundation graduate fellowship, awarded (1991)
- AT&T Graduate Research Program for Women grant (1991–1996)
- Pyne Honor Prize for outstanding Princeton University senior (1991)
- James Hayes-Edgar Palmer Prize in Engineering graduation award (1991)
- Computer Engineering Excellence graduation award (1991)
- Phi Beta Kappa, Tau Beta Pi, and Sigma Xi

### **Keynote, plenary, and distinguished lectures**

- Keynote talk (virtual) at N2Women workshop (August 2021)
- Distinguished Lecture (virtual) on “Networks Capable of Change” at Duke (April 2021)
- Distinguished Lecture (virtual) on “Networks Capable of Change” at Case Western Reserve University (March 2021)
- Distinguished Lecture (virtual) on “Networks Capable of Change” at University of Delaware (February 2021)
- Distinguished Lecture (virtual) on “Networks Capable of Change” at University of Washington (January 2021)
- Distinguished Lecture (virtual) on “Securing Internet Applications from Routing Attacks” at USC (November 2020)
- Distinguished Lecture (virtual) on “Networks Capable of Change” at University of Michigan (November 2020)
- Distinguished Lecture (virtual) on “Securing Internet Applications from Routing Attacks” at Pomona College (October 2020)
- Distinguished Lecture (virtual) on “Toward Self-Driving Networks” at Technische Universitat Darmstadt (October 2020)
- Keynote talk (virtual) on “Securing Internet Applications from Routing Attacks” at ACM SIGCOMM Workshop on Traffic Manipulation (August 2020)
- Keynote talk (virtual) on “In-Network Traffic Obfuscation” at ACM SIGCOMM Workshop on Secure Programmable Network Infrastructure (August 2020)
- Keynote talk (virtual) on “Networks Capable of Change” at IEEE International Conference on High Performance Switching and Routing (May 2020)
- Distinguished lecture at Instituto Superior Tecnico in Lisbon (June 2019)
- IEEE Internet Award keynote talk at IEEE INFOCOM’19 (April 2019)
- Future Forum keynote talk in Beijing (November 2018)

- Distinguished lecture at Brown University (September 2018)
- ACM SIGCOMM Award keynote talk at SIGCOMM'18 (August 2018)
- ACM Athena Lecturer talk at Microsoft (November 2017)
- ACM Athena Lecturer keynote talk at Grace Hopper Celebration of Women in Computing (October 2017)
- ACM Athena Lecturer keynote talk at SIGCOMM'17 (August 2017)
- "Programming Abstractions for Software-Defined Networks," Mary Jean Harrold Memorial Lecture, Georgia Tech (November 2015)
- "Putting the 'Inter' in 'Internet'," distinguished lecture, University of Pennsylvania (November 2014)
- "Enabling Innovation Inside the Network," distinguished lecture, Texas A&M (April 2014)
- "Enabling Innovation Inside the Network," distinguished lecture, University of Minnesota (February 2014)
- "Enabling Innovation Inside the Network," distinguished lecture, Columbia University (October 2013)
- "Enabling Innovation Inside the Network," distinguished lecture, University of Delaware (March 2013)
- "Enabling Innovation Inside the Network," distinguished lecture, University of Maryland (December 2012)
- "Enabling Innovation Inside the Network," distinguished lecture, Boston University (February 2012)
- "Enabling Innovation Inside the Network," distinguished lecture, University of Illinois at Urbana-Champaign (February 2012)
- "Programming Languages for Programmable Networks," Principles of Programming Languages (January 2012)
- "The Networking Philosopher's Problem," CoNext Student Workshop, November 2010
- "'Hashing Out' the Future of Enterprise and Data Center Networks," Distinguished Lecture, Rutgers Electrical and Computer Engineering Department, December 2009
- "Stable Internet Routing Without Global Coordination," Computer Science and Economics Day, New York Academy of Sciences, November 2009
- "VROOM: Virtual ROuters On the Move," Juniper Distinguished Speaker Series, October 2008.
- "Rethinking Internet Traffic Management Using Optimization Theory," University of Toronto Networking Seminar, September 2008.
- "Building a Strong Foundation for a Future Internet," Invited Lecture, ACM Symposium on Theory of Computing, May 2008.

- “Building a Strong Foundation for a Future Internet,” Distinguished Lecture, National Science Foundation, May 2008.
- “Rethinking Internet Traffic Management Using Optimization Theory,” Computer Science and Engineering Colloquium, University of Washington, January 2008.
- “VINI: Virtual Network Infrastructure,” Invited Talk, CoNext Student Workshop, December 2007.
- “VINI: Virtual Network Infrastructure,” Invited Talk, Grace Hopper Celebration of Women in Computing, October 2007.
- “VINI: Virtual Network Infrastructure,” Distinguished Lecture, Cornell University, September 2007.
- “VINI: Virtual Network Infrastructure,” Distinguished Seminar, Northwestern University, electrical engineering and computer science department, May 2007.
- “VINI: Virtual Network Infrastructure,” Cray Lecture Series, University of Minnesota, computer science department, April 2007.
- “GENI: Global Environment for Network Innovations,” Overlay Network Symposium in Tokyo, Japan, December 2006.
- “Stable Internet Routing Without Global Coordination,” Distinguished Lecture, Purdue University, computer science department, September 2006.
- “GENI: Global Environment for Network Innovations,” keynote talk, EuroNGI and ITG Workshop on “Visions of Future Generation Networks,” July/August 2006.
- “Stable Internet Routing Without Global Coordination,” Distinguished Lecture, Carnegie Mellon University school of computer science, February 2006.
- “Economic Incentives in Interdomain Routing,” invited talk, ACM Conference on Electronic Commerce, June 2005.

### **Professional leadership**

- FABRIC testbed Scientific Advisory Committee (2019–2022)
- Editorial Board of the Proceedings of the National Academy of Sciences (2021–2022)
- Computing Community Consortium (2014–2020), executive committee (2016–2018)
- P4 Consortium Board of Directors (2015–2019) and Technical Steering Team (2019–2020)
- ACM SIGCOMM Committee to Aid REporting on discrimination and haraSsment (2018–2022)
- Open Networking Foundation, Board (2014–2017)
- Open Networking Foundation, Technical Advisory Group (2013–2016)
- ACM Queue, Board member (2013–2014)
- IEEE/ACM Transactions on Networking, Editor-at-Large (2013–2022)
- Member, Open Internet Advisory Committee of the FCC, and chair of the Mobile Broadband working group (2012–2014)
- Co-chair, FCC Working Group on Secure Interdomain Routing (2011–2013)
- Defense Science Study Group (2010–2011)
- NSF CISE Advisory Committee (2009–2013), co-chair (2011–2014)
- *Communications of the ACM* Editorial Board (2009–2010)
- GENI/NetSE Science Council (2007–present)

- Steering committee of *IEEE/ACM Transactions on Networking* (2008-2009)
- Academic Quality Assessment Review for UMass-Amherst Computer Science department (2007)
- Co-organizer of DIMACS Special Focus on Algorithmic Foundations of the Internet (2007-2010)
- Networking and Information Technology Technical Advisory Group for the President's Council of Advisors on Science and Technology (2006–2007)
- Computing Research Association board of directors (2005–2008)
- NSF GENI planning group and backbone working group (2005–2007)
- ACM Council (2004–2006, 2007–2008)
- Chair of ACM SIGCOMM (2003–2007)
- DARPA Information Science and Technology Study Group (2003–2006)
- ACM Membership Services Board (2004)
- ACM SIGMETRICS Board of Directors (2003–2005)
- ACM SIGCOMM Technical Advisory Committee (2002–2003, 2010–2013)
- NRC committee on “The Internet Under Crisis Conditions: Learning from September 11” (2002)
- Editorial board of *IEEE/ACM Transactions on Networking* (2000–2004)
- Co-editor of *IEEE Journal on Selected Areas in Communications* issue on “Internet Proxy Services” (2001/2002)
- Advisory council for Electrical Engineering department at Princeton University (2002–2004)

### **Awards Committees**

- ACM SIGCOMM Test of Time Award Committee (2022, 2021, 2016, 2012, 2008)
- ACM Prize in Computing Committee (2020–2024)
- IEEE Founders Medal Selection Committee (2020–2022)
- Marconi Prize Selection Advisory Committee (2018–2022)
- NCWIT Harrold and Notkin Research and Graduate Mentoring Award Selection Committee (2017–2022)
- Sloan Foundation Computer Science Committee (2017–2022)
- IEEE Kobayashi Computers and Communications Award Selection Committee (2016–2019)
- National Academy of Engineering Computer Science Peer Committee (2016–2018)
- VMware Software Systems Award Committee (2016–2021)
- ACM Distinguished Member Selection Committee (2015-2017)
- Anita Borg Institute Technical Leadership Award Committee (2011-2014)
- ACM SIGMETRICS Rising Star Award Committee (2013)
- IEEE INFOCOM Award Committee (2009, 2007)
- ACM Grace Murray Hopper Award Committee (2006-2009)
- CRA Distinguished Service Award Committee (2005)

### **Technical Advisory Boards**

- INSAIT (Institute for Computer Science and Artificial Intelligence and Technology) advisory board (2022–2023)
- Microsoft Research India technical advisory board (2021–2022)
- Barefoot Networks (2015–2019), acquired by Intel
- Waltz/Mode (2015–)
- Gencore/Netsil Systems (2013–2018), acquired by Nutanix
- Deutsche Telekom Laboratories Advisory Board (2007–2011)
- Pollere TMOS Technical Advisory Group (2006–2009)
- AlterPoint Technical Advisory Board (2006–2009)
- Arbor Networks Technical Advisory Board (2003–2010), now part of NetScout Systems

- MentorNet Advisory board (1999–2003)

### **Conference committees**

- General co-chair for the ACM SIGCOMM Asia-Pacific Workshop on Networking (2019)
- Program committee co-chair for ACM SIGCOMM Workshop on Self-Driving Networks (2018)
- Program committee co-chair for Symposium on SDN Research (2015)
- Steering committee for Workshop on Hot Topics in Software Defined Networks (2012–2013)
- Program committee co-chair for Hot Topics in Software Defined Networks (2012)
- Steering committee for Workshop on Cellular Networks (2012–)
- Steering committee for Networked Systems Design and Implementation (2009–2016)
- Area program committee chair for ICNP (2009)
- Program committee co-chair for NSDI (2009)
- Program committee co-chair for Asian Internet Engineering Conference (2008)
- Program committee co-chair of ACM SIGCOMM Workshop on Programmable Routers for the Extensible Services of Tomorrow (2008)
- Steering committee for CoNext (2005–2007)
- Program committee co-chair for ACM SIGCOMM (2004)
- Program committee co-chair for ACM SIGMETRICS (2003)
- Co-organizer of Workshop on Internet Routing Evolution and Design (2003)
- Steering committee of the Internet Measurement Workshop (2001–2003)
- International vice-chair for the Americas for IEEE INFOCOM (2001)
- Co-organizer of DIMACS workshop on multimedia streaming (2000)
- Financial co-chair for IEEE INFOCOM (1999)
- Program committee member for

- 2023 USENIX Symposium on Networked Systems Design and Implementation, Free and Open Communications on the Internet
- 2021 USENIX Symposium on Networked Systems Design and Implementation, ACM SIGCOMM
- 2018 ACM SIGCOMM Workshop on In-Network Computing
- 2017 SIGCOMM Workshop on Hot Topics in Networking
- 2014 USENIX Symposium on Networked Systems Design and Implementation
- 2013 SIGCOMM Workshop on Hot Topics in Software Defined Networks, Workshop on Rigorous Protocol Engineering, ACM SIGCOMM Workshop on Hot Topics in Middleboxes and Network Function Virtualization
- 2012 SIGCOMM Workshop on Cellular Networks, Hot Topics in Security, Free and Open Communication on the Internet, Asian Internet Engineering Conference
- 2011 SIGCOMM Workshop on Hot Topics in Networking, Latin America Networking Conference, Workshop on Rigorous Protocol Engineering, USENIX Workshop on Free and Open Communications on the Internet
- 2010 USENIX Symposium on Networked Systems Design and Implementation, ACM SIGCOMM, VISA, Workshop on Network Embedded Management and Applications
- 2009 COMSNETS, ACM SIGCOMM, WREN, VISA, PRESTO
- 2008 Passive and Active Measurement Conference
- 2007 Latin America Networking Conference, ACM SIGCOMM, Internet Network Management Workshop
- 2006: USENIX Symposium on Networked Systems Design and Implementation, ACM SIGCOMM, North American Network Operators Group
- 2005: ACM SIGCOMM MineNet Workshop, Latin America Networking Conference, Internet Measurement Conference, SIGCOMM Workshop on Hot Topics in Networking
- 2004: USENIX Symposium on Networked Systems Design and Implementation
- 2003: IEEE International Conference on Network Protocols, ACM SIGCOMM Workshop on Models, Methods, and Tools for Reproducible Network Research
- 2002: ACM SIGMETRICS, ACM SIGCOMM, ITC Specialist Seminar on Internet Traffic Engineering and Traffic Management, International Conference on Dependable Systems and Networks
- 2001: ACM SIGMETRICS, ACM SIGCOMM
- 2000: ACM SIGMETRICS, IEEE INFOCOM, IEEE Global Internet Symposium, SPIE/ACM Conference on Multimedia Computing and Networking, Real-Time Applications Symposium
- 1999: Workshop on Internet Applications, International Conference on Distributed Computing Systems, SPIE/ACM Conference on Multimedia Computing and Networking
- 1998: IEEE INFOCOM, Real-Time Systems Symposium, International Conference on Parallel Processing

### **PhD student graduates**

- Yufei Zheng (PhD August 2024) on “Compact Algorithms for Measuring Network Performance,” joined University of Massachusetts at Amherst as a postdoc in September 2024
- Mary Hogan (PhD May 2024) on “Language Expressiveness Under Extreme Scarcity in Programmable Data Planes,” joined Oberlin College as an assistant professor in summer 2024
- Xiaoqi Chen (PhD October 2023) on “Designing Compact Data Structures for Network Measurement



and Control,” joined VMware Research as a postdoc, joining Purdue University as an assistant professor in fall 2024

- Jennifer Gossels (PhD April 2020) on “Joint Optimization for Robust Network Design and Operation,” joined Chicago Cubs as an analyst

- Mina Tahmasbi Arashloo (PhD June 2019) on “Stateful Programming of High-Speed Network Hardware,” joined Cornell on a Presidential Postdoctoral Fellowship, joined University of Waterloo as an assistant professor in summer 2022

- Robert Harrison (PhD June 2019) on “Scalable, Network-Wide Telemetry with Programmable Switches,” joined West Point as assistant professor, now an associate professor at West Point

- Mojgan Ghasemi (PhD September 2017) on “Data-Driven Management of CDN Performance,” joined Akamai summer 2017, joined Google 2020

- Naga Katta (PhD October 2016) on “Building Efficient and Reliable Software-Defined Networks,” joined Salesforce in November 2016

- Xin Jin (PhD June 2016) on “Dynamic Control of Software-Defined Networks,” started postdoc at UC Berkeley in July 2016 before joining Johns Hopkins University as an assistant professor in fall 2017, and becoming an associate professor at Peking University in 2021

- Srinivas Narayana (PhD May 2016) on “Declarative Network Path Queries”, started postdoc at MIT in July 2016 before joining Rutgers as an assistant professor in fall 2018

- Nanxi Kang (PhD December 2015) on “Flexible Enterprise Network Management on Commodity Switches,” started at Databricks in February 2016

- Peng Sun (PhD May 2015), on “Integrating Network Management for Cloud Computing Services,” started at VMware in summer 2015 and joined Facebook in 2016

- Wenjie Joe Jiang (PhD February 2012, co-advised with Mung Chiang), on “Wide-Area Traffic Management for Cloud Services,” started at Google in February 2012

- Eric Keller (PhD August 2011), on “Refactoring Router Software to Minimize Disruption”, started post-doc at UPenn in September 2011 before joining University of Colorado as an assistant professor in summer 2012, now an associate professor at University of Colorado

- Yaping Zhu (PhD August 2011), on “Minimizing Wide-Area Performance Disruptions in Interdomain Routing,” started at Google in October 2011

- Minlan Yu (PhD August 2011) on “Scalable Management of Enterprise and Data-Center Networks,” started one-year post-doc at UC Berkeley in August 2011 before joining USC as an assistant professor in summer 2012, then joined Yale University as an assistant professor in fall 2016, and then joined Harvard as an associate professor in January 2018, now a tenured associate professor at Harvard

- Martin Suchara (PhD summer 2011), on “Reliable Internet Routing,” joined UC Berkeley as a post-doctoral researcher in July 2011, joined IBM Research as a Post-doctoral Scholar in 2013, then joined AT&T Labs in 2015, then joined Argonne National Laboratory in 2018, and then joined Amazon Web Services in 2022

- Wen Xu (PhD summer 2009), on “MIRO: Multi-path Interdomain ROuting,” joined Google in July 2006
- Sharon Goldberg (PhD summer 2009, co-advised with Boaz Barak), on “Towards Securing Interdomain Routing on the Internet,” started one-year post-doc at Microsoft Research in August 2009, before joining Boston University as an assistant professor in August 2010, before promotion to associate professor (with tenure) in April 2015
- Haakon Ringberg (PhD summer 2009), on “Privacy-Preserving Collaborative Network Anomaly Detection,” joined Google NYC in August 2009
- Elliott Karpilovsky (PhD summer 2009), on “Reducing Memory Requirements for Routing Protocols,” joined Google in fall 2009
- Changhoon Kim (PhD summer 2009), on “Scalable and Efficient Self-Configuring Networks,” joined Microsoft Azure group in July 2009, joined Barefoot Networks in April 2014 (acquired by Intel in 2019) , and joined MOLOCO in March 2021
- Yi Wang (PhD spring 2009), on “A Principled Approach to Managing Routing in Large ISP Networks,” joined Google in July 2009, joined AdChina in April 2011, and founded start-up company Liu Li Shuo in September 2012
- Jiayue He (PhD spring 2008, co-advised with Mung Chiang), on “Rethinking Traffic Management: Design of Optimizable Networks,” joined McKinsey in August 2008, then joined ezHome

#### **MSE student graduates**

- Mengying Pan (MSE June 2020) on “Memory-Efficient Membership Encoding in Switches,” started PhD program at Princeton in summer 2020
- Suriya Kodeswaran (MSE June 2020) on “Tracking P4 Program Execution in the Data Plane”
- Ross Teixeira (MSE June 2019) on “SwitchScope: A View from the Inside,” started PhD program at Princeton in fall 2019, joined The Markup as an investigative data journalist in fall 2023
- Qizhe Cai (MSE June 2018) on “Network-Wide Heavy-Hitter Detection for Real-Time Telemetry,” started PhD program at Cornell in fall 2018
- Sophie Qiu (MSE June 2017) on “Streaming Data Visualization for Network Security,” started PhD program at CMU in fall 2017
- Robert MacDavid (MSE June 2016), started PhD program at Princeton in summer 2016
- Xuan Kelvin Zou (MA June 2015), started at Microsoft Azure in fall 2015, now working at ByteDance
- Michael Kranch (MSE May 2015), on “Upgrading HTTPS Mid-Air: An Empirical Study of Strict Transport Security and Public Key Pinning”
- Dushyant Arora (MSE May 2013), on “Proactive Routing in Scalable Data Centers with PARIS,” joined Arista Networks, fall 2013
- Jacopo Cesareo (MSE May 2012), on “Optimizing Implicit Proxy Placement to Evade Traffic Filters,” joined Arista Networks, fall 2012

- Dmitry Drutskoy (MSE May 2012), on “Software-Defined Network Virtualization with FlowN,” joined Elysium Digital in summer 2012
- Robert Harrison (MSE May 2011, co-advised with David Walker), on “Frenetic: A Network Programming Language,” joined the U.S. Military Academy (West Point) as an instructor in June 2011
- Richard Wang (MSE May 2011), on “OpenFlow-based Load Balancing Gone Wild,” joined Carnegie Mellon University as a PhD student in fall 2011

### University service

- Provost (2023–present)
- Chair of Computer Science department (2015–2023)
- Infrastructure Master Plan Advisory Group (2015)
- Princeton Entrepreneurship Council (2015–2018)
- Faculty Advisory Committee on Diversity (2015–2021)
- School of Engineering Self-Study Committee (2014–2015)
- Princeton Entrepreneurship Advisory Committee (2014–2015)
- Advisory Committee on Appointments and Advancements (2013–2014 academic year)
- Search committee for the director of the Genomics Institute (2013–2014 academic year)
- Acting chair of Computer Science (summer and fall 2013)
- CIO Search Committee (2012)
- Honorary Degrees Committee (2011–2014)
- Faculty Advisor, Princeton Women in Computer Science undergraduate group (2010–present)
- Undergraduate Academic Advisor, AB program, Forbes College (2010–2012)
- Committee on the President’s Award for Distinguished Teaching (2010)
- Director of Graduate Studies, Computer Science Department (2009–present)
- Committee on the Future of Climate and Environmental Sciences at Princeton (2008–2009)
- Committee on Grading (2008–2011)
- Diversity Council (2008–2009)
- Target of Opportunity committee (2007–2008)
- Engineering School diversity committee (2005–), chair (fall 2007–2009)
- Engineering/Math/Physics integrated course for first-year engineering students (2005–2009), director (fall 2008–spring 2011)
- Engineering School dean search committee (spring 2006)
- Advisor for first-year engineering students (2005–2006 and 2007–2008 academic years)

**Books** Pamela Zave and Jennifer Rexford, *The Real Internet Architecture: Past, Present, and Future Evolution*, Princeton University Press, August 2024.

Balachander Krishnamurthy and Jennifer Rexford, *Web Protocols and Practice: HTTP/1.1, Networking Protocols, Caching, and Traffic Measurement*, Addison-Wesley, May 2001.

Yvonne Ng and Jennifer Rexford, editors, *She’s an Engineer? Princeton Alumnae Reflect*, Princeton University, 1993.

### Book chapters

Pamela Zave and Jennifer Rexford, “The design space of network mobility,” in *SIGCOMM eBook on Recent Advances in Networking*, Volume 1, 2013.

Jiayue He, Jennifer Rexford, and Mung Chiang, “Design for optimizability: Traffic management of a future Internet,” chapter in *Algorithms for Next Generation Architectures*, Springer, March 2010.

Jennifer Rexford, “Route optimization in IP networks,” chapter in *Handbook of Optimization in Telecommunications*, Springer Science and Business Media, February 2006.

Matthias Grossglauser and Jennifer Rexford, “Passive traffic measurement for IP operations,” pp. 91–120, *The Internet as a Large-Scale Complex System*, Oxford University Press, 2005.

## **Tutorials**

Presented tutorial on “Internet Routing” at Microsoft Research India Summer School on Networking (June 2009).

Co-presented full-day tutorial on “Traffic Measurement for IP Operations” at ACM SIGCOMM’01 (August 2001) and KRNETH’03 (June 2003), and half-day tutorials at IPAM (March 2002), INFOCOM’02 (June 2002), and the IMA (January 2004).

Co-presented full-day tutorial on “Web Protocols and Workloads” at ACM SIGCOMM’99 (September 1999) and WWW’00 (May 2000).

## **Journal papers and magazine articles**

Shir Landau-Feibish, Zaoxing Liu, and Jennifer Rexford, “Compact data structures for network telemetry,” in *ACM Computing Surveys*, volume 57, number 8, August 2025.

Mary Hogan, Devon Loehr, John Sonchack, Shir Landau Feibish, Jennifer Rexford, and David Walker, “Automated optimization of parameterized data-plane programs with Parasol,” in *IEEE/ACM Transaction on Networking*, volume 33, number 2, April 2025.

Robert MacDavid, Xiaoqi Chen, and Jennifer Rexford, “Scalable real-time bandwidth fairness in switches,” in *IEEE/ACM Transactions on Networking*, volume 32, number 2, April 2024.

Ori Rottenstreich, Ariel Kulik, Ananya Joshi, Jennifer Rexford, Gabor Retvari, and Daniel S. Menasche, “Data Plane Cooperative Caching with Dependencies,” in *IEEE Transactions on Network and Service Management*, September 2022.

Yixin Sun, Maria Apostolaki, Henry Birge-Lee, Laurent Vanbever, Jennifer Rexford, Mung Chiang, and Prateek Mittal, “Securing Internet applications from routing attacks,” in *Communications of the ACM*, June 2021.

Pamela Zave, Fabricio Barbosa Carvalho, Ronaldo Alves Ferreira, Jennifer Rexford, Masaharu Morimoto, and Kelvin Xuan, “A verified session protocol for dynamic service chaining,” in *IEEE/ACM Transactions on Networking*, volume 29, number 1, February 2021.

Pamela Zave and Jennifer Rexford, “Patterns and interactions in network security,” *ACM Computing Surveys*, volume 53, number 6, December 2020.

Muhammad Shahbaz, Lalith Suresh, Jennifer Rexford, Nick Feamster, Ori Rottenstreich, and Mukesh Hira, “Elmo: Source routed multicast for public clouds,” in *IEEE/ACM Transactions on Networking*, September 2020.

Jennifer Gossels, Gagan Choudhury, and Jennifer Rexford, “Robust network design for IP/optical backbones,” in *Journal of Optical Communications and Networking*, volume 11, issue 8, pp. 478-490, 2019.

Pamela Zave and Jennifer Rexford, “The compositional architecture of the Internet,” in *Communications of the ACM*, March 2019.

Ori Rottenstreich, Yossi Kanizo, Haim Kaplan, and Jennifer Rexford, “Accurate traffic splitting on commodity switches,” in *IEEE Journal on Selected Areas in Communications*, volume 36, issue 10, October 2018.

Nanxi Kang, Ori Rottenstreich, Sanjay Rao, and Jennifer Rexford, “Alpaca: Compact Network Policies with Attribute-Encoded Addresses,” in *IEEE/ACM Transactions on Networking*, volume 25, issue 3, June 2017.

Joao L. Sobrinho, Laurent Vanbever, Franck Le, Andre Sousa, and Jennifer Rexford, “Scaling the Internet routing system through distributed route aggregation,” in *IEEE/ACM Transactions on Networking*, December 2016.

Sharon Goldberg, David Xiao, Eran Tromer, Boaz Barak and Jennifer Rexford, “Path-quality monitoring in the presence of adversaries: The secure sketch protocols,” in *IEEE/ACM Transactions on Networking*, volume 23, number 6, December 2015.

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