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WORK EXPERIENCE

Professor, University of Virginia (UVA), Charlottesville, VA (Aug. 2007 - Present)

- Charles L. Brown Department of Electrical and Computer Engineering
- Courtesy faculty appointment: Department of Computer Science
- Affiliated faculty: Department of Statistics
- Affiliated faculty: Data Science Institute
- Total federal research grants obtained through peer-reviewed competitive processes since joining UVA 15 years ago: \$15.9 million. Research area: High-Speed Networks.
- Advised and graduated 11 Ph.D. and 16 Masters students.
- Taught graduate and undergraduate courses in *Computer Networks*, *Internet Engineering*, *Performance Analysis of Communication Networks*, *Wireless Networks*, and a case-studies oriented statistics course titled *From Data to Knowledge*.
- Received a Faculty Award, Gamma Pi Chapter, UVA, in 2015, and Recognized with a ECE Department Faculty Educational Innovation Award 2013.

Associate Professor, University of Virginia, Charlottesville, VA (Jan. 2003 - July 2007)

- Director of Computer Engineering, Jan. 2003 - Jan. 2006: Led the creation of a new graduate program to offer masters and Ph.D. degrees in Computer Engineering, a joint program offered by the Computer Science and the Charles L. Brown Electrical and Computer Engineering departments.
- Joint position in the Depts. of Computer Science and Elec. & Computer Engineering (Jan. 2003-March 2006)

Associate Professor, Polytechnic University, Brooklyn, New York (Jan.1999 - Jan. 2003)

- *Research and Teaching* in the field of computer networking and telecommunications.
— WiFi networks, SS7 system testing, optical networking, signaling protocols
- Won Jacobs Award for Excellence in Education, Polytechnic University, 2002
- Graduated four M.S. thesis students
- Total research grants obtained while at Polytechnic: ~\$1.5 million
- Created first online course in the ECE department and taught courses on Wireless Net-

working, Internet Engineering, Data Networks

- Tenured in July 2001.
- Three US patents issued (2 assigned to Polytechnic University; 1 to Verizon)

Distinguished Member of Technical Staff, Bell Labs., Holmdel, NJ (Aug. '94— Jan. '99)

- Research areas: Wireless networks, Mobility management, Optical networks, ATM, MPLS, SS7, VoIP, H.323, SIP, Quality-of-Service (QoS) guaranteed networking, WiFi, Cellular, 3G, Routing protocols and Network Management.
- Principal investigator in a three-year multi-million dollar NIST-funded project called “Mobile Information Infrastructure.”
- Managed teams of hardware and software developers.
- 27 US patents issued

Member of Technical Staff, Bell Labs., Holmdel, NJ (May '92— Aug. '94)

- Applied distributed computing concepts to telecommunications software and created a Distributed Call Processing Architecture (DCPA) using object-oriented analysis. Uses parallel processing for significant performance gains. Recognized with the Distinguished Member of Technical Staff Award for this work.

Member of Technical Staff, AT&T Bell Labs., Columbus, OH (September '88 — May '92)

- Project leader for the implementation of a highly-reliable Signaling System No. 7 interface unit using state-of-the-art technology (FutureBus+ and object-oriented design). Team of 15.

Research Assistant, Duke University (Sept. '87 — Aug. '88)

- Joint projects with C. S. Draper Laboratories and NASA Langley Research Center to analyze the reliability and performance of a number of computer and control systems.

EDUCATION

Doctor of Philosophy (Ph.D.) in Electrical Engineering

Duke University, Durham, NC (September 1988)

Dissertation: Modeling and Evaluation of Fault-Tolerant Multiple Processor Systems

Advisor: Prof. Kishor S. Trivedi

Master of Science (M.S.) in Electrical Engineering

Duke University, Durham, NC (December 1985)

Dissertation: Simulation of the Point Classifier: A VLSI Processor for Displaying Complex Two- Dimensional Color Objects

Bachelor of Technology (B.Tech.) in Electrical Engineering

Indian Institute of Technology, Madras, India (May 1984)

HONORS

- IEEE HKN Faculty Award, Gamma Pi Chapter, University of Virginia, Selected by students and awarded on behalf of IEEE-HKN and School of Engineering and Applied Science, 2014-2015.
- Faculty Educational Innovation Award of the Charles L. Brown Electrical and Computer Engineering Department, University of Virginia, 2013.
- Over 130 publications, including six Best Paper Awards ('93, '95, '96, '99, '03, '13)
- Thirty US Patents.
- Jacobs Award for Excellence in Education, Polytechnic University, 2002.
- James B. Duke Fellowship, Duke Univ., Durham (1984 - 1987)
- National Talent Search Scholarship, NCERT, New Delhi, India (1979 - 1984)
- Eta Kappa Nu society

RESEARCH GRANTS

Since joining UVA, I have brought in \$15.9 M from federal grants plus additional funds from internal (UVA) sources:

- DARPA, *P-CORE: Privacy Enhanced Coordinated Enterprise Defense via Temporal and Topological Representation Learning*, \$7,557,428, my role: PI, May 8, 2018- May 7, 2022.
- NSF S&CC: *A Novel Architecture for Secure, Energy-Efficient Community-Edge-Clouds with Application in Harlem* (SEEC HARLEM), \$400,000, my role: UVA PI, Sept. 15, 2017 - Aug. 31, 2020.
- NSF, CC*: *Enhancement and Deployment of LDM7 for scientific data distribution*, \$1,000,000, my role: PI, Mar. 31, 2017 - Mar. 30, 2019.
- DOE SBIR with Reservoir Labs, Inc., *Real-time Alpha-Flow Traffic Management System*, \$75,000, my role: UVA PI, April 2017 - March 2019.
- US Ignite Gigabit Application/Service Development Fund: *A Virtual Desktop Service using Cyber-Protected Edge Cloud (CPEC) with Dumb User Devices (DUDs)*, \$9,000, my role: UVA PI.
- University of Virginia, School of Engineering and Applied Science, Research Innovation Awards (RIA) Program, Seed grant: *Network traffic analytics for cyber-security*, approx.: \$100,000, my role: PI, June 1, 2017 - Aug. 30, 2017.
- University of Virginia, School of Engineering and Applied Science, Research Innovation Awards (RIA) Program, *Enabling Robotic Operations in the Real World: A Cloud-based Visible Light Communication approach*, approx.: \$70,000, my role: co-PI, June 1, 2017 - Aug. 30, 2017.
- 4VA Program: *Network traffic analytics for cyber-security*, UVA portion: \$23,000, my role: PI, Aug. 15, 2017 - Aug. 14, 2018.

- NSF, *US/Japan Trustworthy Networking Workshop*, \$73,812, my role: Sole PI, Feb. 2016 - Jan. 2017.
- NSF, *US Ignite: Collaborative Research: Track 1: Industrial Cloud Robotics across Software Defined Networks*, \$424,261, my role: PI, Sept. 2015 - Aug. 2018.
- DOE SBIR with Reservoir Labs, *Real-time Alpha-Flow Traffic Management System*, \$483,000, my role: PI, Feb. 2014 - Nov. 2016.
- NSF, *NeTS: JUNO: Collaborative Research: ACTION: Applications Coordinating with Transport, IP, and Optical Networks*, \$150,000, my role: PI, 2014-2017.
- NSF, *CC-NIE Integration: Leveraging DYNES for Weather Data Distribution on Multicast Virtual Circuits*, \$899,946, my role: PI, 2013-2017.
- NSF, *An integrated study of datacenter and wide-area networking for distributed scientific computing*, \$498,378, my role: PI, 2011-2016.
- NSF, *Boosting Inter-Domain Scheduled Dynamic Circuit Services (SDCS)*, \$250,000, my role: PI, 2011-2016.
- UVA Teaching Resource Center Fall 2012 Challenge for Newly Hybrid Technology-Enhanced Courses, *Computer Networks Flipped-Classroom Offering*, \$10,000, my role: PI, 2012-2013
- US DOE, *Terabit-scale hybrid networking*, \$497,442, my role: PI, 2012-2015.
- NSF, *Towards increasing the usage of new high-speed network services by the scientific community*, \$299,916, my role: sole PI, 2010-2013.
- DOE, *Resource Optimization in Hybrid Core Networks with 100G Links*, \$524,806, my role: sole PI, 2009-2013.
- US DOT, *Advance Freeway Merger Assistance: Harnessing the Potential IntelliDrive*, \$500,000, my role: co-PI, Sep. 2009-Aug. 2011.
- NSF, *End-To-End Provisioned Optical Network Testbed for Large-Scale eScience Applications*, \$3.5M, 2004-2008, my role: PI (co-PIs at CUNY, NCSU, Oakridge Natl. Lab); UVA (sole PI) portion: \$2,113,000, 2004-2009.
- DOE, *Enabling Supernova Computations by Integrated Transport & Provisioning Methods Optimized for Dedicated Channels*, \$240,000, 2004-2006, my role: PI (co-PI: ORNL); UVA (sole PI) portion: \$240,000.
- NSF, *Fast File Transfers Across Optical Circuit-Switched Networks*, \$325,000, 2003-2006, my role: PI (Co-PIs at CUNY, Polytechnic University); UVA (sole PI) portion: \$159,304.
- Internet2/Cisco, Equipment grant of two Cisco 12008 high-end IP routers, Dec. 2002; rough estimate: \$100,000 (UVA; sole PI).
- NSF, *Towards enabling a 2-3 orders of magnitude improvement in call handling capacities of switches*, \$450,000, plus \$60,000 in cost-share support from Polytechnic University, 2001-2006, my role: PI; my portion: \$405,000 of which \$165,285 was moved to UVA (Sole PI) in 2004.
- Village Networks, *A study of different optical metropolitan-area network architectures*, \$116,166, 2001-2002, my role: PI; Sole PI.
- Verizon, *Automation of SS7 testing*, \$262,697, Sept. 2000 - Aug. 2001, my role: PI. Sole PI.

- Verizon, *SS7 testing methodology development*, \$170,000, Sept. 99-Aug. 00, my role: PI. Sole PI.
- NYSTAR (New York Office of Science, Technology and Academic Research) through the Center of Advanced Technology in Telecommunications (CATT), approx. \$548,863. Sole PI.
- NIST, *Mobile Information Infrastructure*, 1994-1997, \$12 Million, Bell Labs, co-PI.

PUBLICATIONS

- **Google scholar:**

- h-index: 39; Number of citations: 6912

- **Best paper awards**

- (1) Z. Yan, M. Veeraraghavan, C. Tracy, C. Guok, "On How to Provision Quality of Service (QoS) for Large Dataset Transfers," *The Sixth International Conference on Communication Theory, Reliability, and Quality of Service (CTRQ 2013)*, April 21 - 26, 2013 - Venice, Italy, Best Paper Award.
- (2) M. Veeraraghavan, X. Zheng, H. Lee, M. Gardner, W. Feng, CHEETAH: Circuit-switched High-speed End-to-End Transport Architecture, *Proc. of Opticomm 2003*, Oct. 13-17, 2003. Dallas, TX (was selected as Best Student Paper).
- (3) M. Veeraraghavan and M. Karol, "Internetworking connectionless and connection-oriented networks," *Proc. of IEEE BSS'99*, Kingston, Ontario, Canada, June 1-3, '99 (published as a Selected paper in *IEEE Communications Magazine*, Dec. 1999).
- (4) M. Veeraraghavan, T. F. La Porta, and R. Ramjee, "User Signaling Servers for ATM-Based PCS Networks," *Proc. of ISSLS'96*, Melbourne, Australia, February 4-9, 1996 (won Best Paper Award for Network and Technology Theme).
- (5) M. Veeraraghavan, T. F. La Porta, and W. S. Lai, "An Alternative Approach to Call/Connection Control in Broadband Switching Systems," *Proc. of IEEE BSS'95*, Poznan, Poland, April 19-21, 1995 (won Best Paper Award), appeared as selected paper in *IEEE Communications Magazine*, Vol. 33, No. 11, November 1995, pp. 90-96.
- (6) M. Veeraraghavan and T. F. La Porta, "Signaling Models for Control of B-ISDN and IN-Supported Services," *Proc. of ISSLS'93*, Vancouver, Canada, Sept. 27-Oct. 1, 1993 (won Best Paper Award for Architectures and Technology Theme).

- **Refereed journal papers**

- (1) Lianjun Li, Yizhe Zhang, M Ripperger, J Nicho, M Veeraraghavan, A Fumagalli, "Autonomous Object Pick-and-Sort Procedure for Industrial Robotics Application," *International Journal of Semantic Computing (IJSC)*, 13(2), 2019.
- (2) Xiaoyu Wang, Malathi Veeraraghavan, and Haiying Shen, "Evaluation Study of a Proposed Hadoop for Data Center Networks Incorporating Optical Circuit Switches," *IEEE/OSA Journal of Optical Communications and Networking*, vol. 10, no. 8, Aug. 2018.
- (3) Naoaki Yamanaka, Satoru Okamoto, Masayuki Hirono, Yukihiro Imakiire, Wataru Muro, Takehiro Sato, Eiji Oki, Andrea Fumagalli, and Malathi Veeraraghavan, "Application-Triggered Automatic Distributed Cloud/Network Resource Coordination by Optically Net-

- worked Inter/Intra Data Center,” *IEEE/OSA Journal of Optical Communications and Networking*, vol. 10, no. 7, July 2018.
- (4) Tomohiro Matsuno, Bijoy Chand Chatterjee, Nattapong Kitsuwon, Eiji Oki, Malathi Veeraraghavan, Satoru Okamoto, Naoaki Yamanaka, “Designing a Hadoop system based on computational resources and network delay for wide area networks,” *Springer Telecommunication Systems*, April, 2018, pp. 1-13.
 - (5) Malathi Veeraraghavan, Takehiro Sato, Molly Buchanan, Reza Rahimi, Satoru Okamoto, and Naoaki Yamanaka, “Network Function Virtualization: A Survey,” *IEICE Transactions on Communications*, Vol. E100–B, No.11, November 2017, pp. 1978-1991.
 - (6) Patrick MacArthur, Qian Liu, Robert D. Russell, Fabrice Mizero, Malathi Veeraraghavan † John M. Dennis, “An Integrated Tutorial on InfiniBand, Verbs and MPI,” *IEEE Communication Surveys and Tutorials*, vol. 19, no. 4, pp. 2894-2926, Fourth quarter 2017.
 - (7) Xiao Lin, Weiqiang Sun, Malathi Veeraraghavan, and Weisheng Hu, “Slotted Store-and-Forward (sSnF) Optical Circuit-Switched Networks: A Performance Study,” *IEEE/OSA Journal of Optical Communications and Networking*, vol. 9, no. 7, pp. 563-576, July 2017.
 - (8) Fabrice Mizero, Malathi Veeraraghavan, Qian Liu, Robert D. Russell, John M. Dennis, “A Dynamic Congestion Management System for InfiniBand Networks,” *Supercomputing Frontiers and Innovations*, Vol. 3, No. 2, 2016, <http://superfri.org/superfri/article/view/91>
 - (9) X. Lin, W. Sun, M. Veeraraghavan and W. Hu, "Time-shifted multilayer graph: A routing framework for bulk data transfer in optical circuit-switched networks with assistive storage," *IEEE/OSA Journal of Optical Communications and Networking*, vol. 8, no. 3, pp. 162-174, March 2016.
 - (10) Z. Yan, C. Tracy, M. Veeraraghavan, T. Jin, Z. Liu, “A network management system for handling scientific data flows,” *Springer's Journal of the Network and Systems Management*, 2016, Vol. 24, No. 1, pp. 1-33.
 - (11) K. Ashizawa, S. Okamoto, N. Yamanaka, E. Oki, A. Fumagalli, M. Veeraraghavan, “Application-Centric, Energy-Efficient Network Architecture, ACTION, Based on Virtual Optical Slice Core and Deterministic Optical Access Network,” *OSA Journal of the Optical Society of Korea (JOSK)*, Vol. 19, No. 4, pp. 340-345, August 2015.
 - (12) K. Ashizawa, T. Sato, H. Takeshita, S. Okamoto, N. Yamanaka, E. Oki, A. Fumagalli, M. Veeraraghavan, “Delay-sensitive slot allocation method minimizing switching idle time in PLZT optical switch for active optical access network,” *IEICE Communications Express*, Vol. 4, No. 6, pp. 217-222, July 2015.
 - (13) I. Popescu, T. Miyazaki, M. Chino, X. Wang, S. Okamoto, A. Gravey, P. Gravey, M. Veeraraghavan, M. Brandt-Pearce, N. Yamanaka, “Application-centric energy-efficient Ethernet with quality of service support,” in *IEEE Electronics Letters*, vol. 51, no. 15, pp.1165-1167, 2015.
 - (14) Z. Yan, M. Veeraraghavan, C. Tracy, C. Guok, “On How to Provision Virtual Circuits for Network-Redirected Large-Sized, High-Rate Flows,” *International Journal on Advances in Internet Technology*, vol. 6, no. 3 & 4, 2013.
 - (15) A. Miloslavov, M. Veeraraghavan, “Sensor Data Fusion Algorithms for Vehicular Cyber-Physical Systems,” *IEEE Transactions on Parallel and Distributed Systems*, vol. 23, no. 9, pp.1762-1774, Sept. 2012.
 - (16) H. Park, A. Miloslavov, J. Lee, M. Veeraraghavan, B. Park and B. L. Smith, “Integrated Traf-

fic/Communications Simulation-Based Evaluation Environment for IntelliDriveSM Applications: Utilizing SAE J2735 Dedicated Short Range Communications Message Sets,” *Transportation Research Record: Journal of the Transportation Research Board*, Transportation Research Board of the National Academies, Washington, D.C., 2011.

- (17) X. Fang and M. Veeraraghavan, “A Hybrid Network Architecture for File Transfers,” *IEEE Transactions of Parallel and Distributed Systems*, vol.20, no.12, pp.1714-1725, Dec. 2009.
- (18) X. Zhu, M. Veeraraghavan, “Analysis and design of a book-ahead bandwidth-sharing mechanism,” *IEEE Trans. on Communications*, vol. 56, no. 12, Dec. 2008, pp. 2156-2165.
- (19) X. Zhu, X. Zheng, M. Veeraraghavan, “Experiences in implementing an experimental wide-area GMPLS network,” *IEEE Journal on Selected Areas in Communication*, vol. 25, issue 3, part supplement, April 2007, pp. 82-92.
- (20) T. Li, D. Logothetis, M. Veeraraghavan, “Analysis of a polling system for telephony traffic with application to wireless LANs,” *IEEE Transactions on Wireless Communications*, June 2006, vol. 5, issue 6, June 2006, pp. 1284- 1293.
- (21) H. Wang, M. Veeraraghavan, R. Karri, T. Li, “Design of a High-Performance RSVP-TE Signaling Hardware Accelerator,” *IEEE Journal on Selected Areas in Communication*, vol. 23, issue 8, Aug. 2005, Page(s):1588 - 1595.
- (22) M. Veeraraghavan and X. Zheng, “A Reconfigurable Ethernet/SONET Circuit Based Metro Network Architecture,” *IEEE Journal on Selected Areas in Communication*, vol. 22, issue 8, pp. 1406-1418, Oct. 2004.
- (23) M. Veeraraghavan, X. Zheng, W. Feng, H. Lee, E. K. P. Chong & H. Li, “Scheduling and transport for file transfers on high-speed optical circuits,” *Journal of Grid Computing*, vol. 1, issue 4, 2003, pp. 395-405.
- (24) J. Anderson, J. S. Manchester, A. Rodriguez-Moral and M. Veeraraghavan, “Protocols and Architectures for IP Optical Networking,” *Bell Labs Technical Journal*, Vol. 4, No. 1, Jan.-Mar. 1999, pp. 105-124.
- (25) G. Dommety, M. Veeraraghavan, and M. Singhal, “A Route Optimization Algorithm and its Application to Mobile Location Management in ATM Networks,” *IEEE Journal on Selected Areas of Communication*, Vol. 16, No. 6, August 1998, pp. 890-908.
- (26) Z. Liu, M. Veeraraghavan, and K. Y. Eng, “A Scalable Wireless Virtual LAN,” *ACM/Baltzer Mobile Networks and Applications Journal*, Vol. III, No. 3, 1998, pp. 261-273.
- (27) G. Dommety, M. Veeraraghavan, and M. Singhal, “Route Optimization in Mobile ATM Networks and its Application to Handoff Management,” *ACM/Baltzer Mobile Networks and Applications Journal*, Vol. III, No. 2, August 1998, pp. 203-220.
- (28) M. Veeraraghavan and G. Dommety, “Mobile Location Management in ATM Networks,” *IEEE Journal on Selected Areas in Communications*, Vol. 15, No. 8, October 1997, pp. 1437-1454.
- (29) C. S. Albanese, J. A. Bannister, G. Polyzos, M. Veeraraghavan, M. Zitterbaart, “Editorial Introduction,” Special Issue of *Computer Networks and ISDN Systems Journal* on “Signaling and Management in ATM Networks, Vol. 29, No. 5, April 14, 1997.
- (30) M. Veeraraghavan, M. Karol, and K. Y. Eng, “Mobility and Connection Management in a Wireless ATM LAN,” *IEEE Journal on Selected Areas of Communication*, Vol. 15, No. 1, January 1997, pp. 50-68.
- (31) M. Veeraraghavan, “Connection Control in ATM Networks,” *Bell Labs Technical Journal*,

Vol. 2, No. 1, Winter 1997, pp. 48-64.

- (32) T. F. La Porta, M. Veeraraghavan, and R. Buskens, "Comparison of Signaling Loads for PCS Systems," *IEEE/ACM Transactions on Networking*, Vol. 4, No. 6, December 1996, pp. 840-856.
- (33) E. Ayanoglu, K. Y. Eng, M. Karol, Z. Liu, P. Pancha, M. Veeraraghavan, and C. Woodworth, "Mobile Information Infrastructure," *Bell Labs Technical Journal*, Vol. 1, No. 2, Autumn 1996, pp. 143-164.
- (34) M. Veeraraghavan, T. F. La Porta, and R. Ramjee, "A Distributed Control Strategy for Wireless ATM Networks," *ACM/Baltzer Wireless Networks Journal*, Vol. 1, No. III, 1995, pp. 323-339.
- (35) K. Y. Eng, M. J. Karol, M. Veeraraghavan, E. Ayanoglu, C. B. Woodworth, P. Pancha, and R. A. Valenzuela, "A Wireless Broadband Ad-Hoc ATM Local-Area Network," *ACM/Baltzer Wireless Networks Journal*, Vol. 1, No. II, 1995, pp. 161-174.
- (36) S. Rai, M. Veeraraghavan, and K. S. Trivedi, "A Survey of Efficient Reliability Computation Using Disjoint Products Approach," *Networks Journal*, Vol. 25, No. 3, May 1995, pp. 147-163.
- (37) M. Veeraraghavan and K. S. Trivedi, "A Combinatorial Algorithm for Performance and Reliability Analysis Using Multistate Models," *IEEE Transactions on Computers*, Vol. 43, No. 2, February 1994, pp. 229-233.
- (38) M. Veeraraghavan and T. F. La Porta, "Object Oriented Analysis of Signaling and Control in Broadband Networks," *International Journal of Communication Systems*, Vol. 7, No. 2, April-June 1994, pp. 131-147.
- (39) T. F. La Porta and M. Veeraraghavan, "Evaluation of Broadband UNI Signaling Protocol Techniques," *Journal of High Speed Networks*, Vol. 2, No. 3, 1993, pp. 209-238.
- (40) M. Veeraraghavan and K. S. Trivedi, "An Improved Algorithm for the Symbolic Reliability Analysis," *IEEE Transactions on Reliability*, Vol. 40, No. 3, August 1991, pp. 347-358.

- **Refereed conference papers**

- (1) Xiaoyu Wang, Xiao Lin, Weiqiang Sun, Malathi Veeraraghavan, "Comparison of Two Sharing Modes for a Proposed Optical Enterprise-Access SDN Architecture," 2018 28th IEEE International Telecommunication Networks and Applications Conference (ITNAC), Sydney, NSW, Nov. 21-23, 2018, pp. 1-8.
- (2) Brendan Abraham, Abhijith Mandya, Rohan Bapat, Fatma Alali, Don E. Brown, Malathi Veeraraghavan, "A Comparison of Machine Learning Approaches to Detect Botnet Traffic," *IEEE World Congress on Computational Intelligence (WCCI) International Joint Conference on Neural Networks (IJCNN)*, July 8-13, 2018, Rio de Janeiro, Brazil.
- (3) Sourav Maji, Xiaoyu Wang and Malathi Veeraraghavan, Jordi Ros-Giralt; Alan Commike, "A Pragmatic Approach of Determining Heavy-Hitter Traffic Thresholds," *IEEE European Conference on Networks and Communications (EUCNC)*, June 18-21, 2018, Ljubljana, Slovenia.
- (4) Rohan Bapat, Abhijith Mandya, Xinyang Liu, Brendan Abraham, Donald E. Brown, Hyojung Kang, and Malathi Veeraraghavan, "Identifying Malicious Botnet Traffic using Logistic Regression," *IEEE Systems and Information Engineering Design Symposium (SIEDS)*, April 27, 2018, Charlottesville, VA.

- (5) Jordi Ros-Giralt, Alan Commike, Sourav Maji, Malathi Veeraraghavan, "High Speed Elephant Flow Detection Under Partial Information," *IEEE International Symposium on Networks, Computers and Communications (ISNCC)*, 19-21 June 2018, Rome, Italy.
- (6) Yizhe Zhang, Lianjun Li, Michael Ripperger, Jorge Nicho, Malathi Veeraraghavan and Andrea Fumagalli, "Gilbreth: A Conveyor-Belt Based Pick-and-Sort Industrial Robotics Application," *IEEE International Conference on Robotic Computing*, Laguna Hills, CA, Jan. 31 - Feb. 2, 2018.
- (7) Fatma Al-Ali, Xiao Lin, Malathi Veeraraghavan, Naoaki Yamanaka, Weiqiang Sun, "SDN-Enabled Headroom Services for High-Speed Data Transfers, *23rd IEEE 22nd Asia-Pacific Conference on Communications (APCC)*, Perth Australia, Dec. 11-13, 2017.
- (8) Xiaoyu Wang and Malathi Veeraraghavan, "An Evaluation Study of a Proposed Hadoop for Hybrid Networks (HHN)," *IEEE Globecom*, Singapore, Dec. 4-8, 2017.
- (9) Sourav Maji, Malathi Veeraraghavan, Molly Buchanan, Fatma Alali, Jordi Ros-Giralt, and Alan Commike, "A High-Speed Cheetah Flow Identification Network Function (CFINF)," *IEEE NFV/SDN Conference*, Berlin, Germany, Nov. 6-8, 2017.
- (10) Akira Yamashita, Wataru Muro, Masayuki Hirono, Takehiro Sato, Satoru Okamoto, Naoaki Yamanaka, and Malathi Veeraraghavan, "Hadoop triggered opt/electrical data-center orchestration architecture for reducing power consumption," *19th International Conference on Transparent Optical Networks (ICTON)*, Girona, July 2-6, 2017.
- (11) Fatma Alali, Fabrice Mizero, Malathi Veeraraghavan, John M. Dennis, "A Measurement Study of Congestion in an InfiniBand Network," *IEEE/IFIP Traffic Measurement and Analysis (TMA) Conference*, Dublin, Ireland, June 21-23, 2017.
- (12) Fatma Alali, Sourav Maji, Malathi Veeraraghavan, and Naoaki Yamanaka, "A WAN Scavenger Service for High-Speed Inter-Datacenter Communications," *13th International Conference on IP+Optical Networks (iPOP)*, No. T4-1, Kawasaki, Japan, June 1-2, 2017.
- (13) Xiaoyu Wang, Malathi Veeraraghavan, Zongli Lin, Eiji Oki, "Optical Switch in the Middle (OSM) Architecture for DCNs with Hadoop Adaptations," *IEEE International Conference on Communications (ICC)*, Paris, France, May 21-25, 2017.
- (14) R. Rahimi, C. Shao, M. Veeraraghavan, A. Fumagalli, J. Nicho, J. Meyer, S. Edwards, C. Flannigan and P. Evans, "An Industrial Robotics Application with Cloud Computing and High-Speed Networking," *IEEE International Conference on Robotic Computing*, Taipei, Taiwan, April 10-12, 2017.
- (15) J. Ros-Giralt, A. Commike, R. Lethin, S. Maji and M. Veeraraghavan, "High-performance algorithms and data structures to catch elephant flows," *The 20th IEEE High Performance Extreme Computing Conference (HPEC)*, Waltham, MA, Sept. 13-15, 2016, pp. 1-7.
- (16) N. Yamanaka, S. Okamoto, Y. Imakiire, M. Arase, E. Oki and M. Veeraraghavan, "The ACTION project: Application coordinating with Transport, IP and optical networks," *The 18th IEEE International Conference on Transparent Optical Networks (ICTON)*, Trento, July 10-14, 2016.
- (17) Fatma Al Ali, and Malathi Veeraraghavan, "A Cross-Layer Design for Large Transfers in SDNs," *The Eighth IEEE International Conference on Ubiquitous and Future Networks (ICUFN)*, Vienna, Austria, July 4-7, 2016.
- (18) Xiaoyu Wang, Malathi Veeraraghavan, Eiji Oki, Satoru Okamoto, Naoaki Yamanaka, "Dynamic Optical Circuits in Datacenter Networks for Shuffle-Heavy Hadoop Applications,"

12th International Conference on IP+Optical Networks (iPOP), No. T4-1, Yokohama, Japan, June 15-17, 2016.

- (19) R. Rahimi, M. Veeraraghavan, Y. Nakajima & H. Takahashi, Y. Nakajima, S. Okamoto & N. Yamanaka, "A High-Performance OpenFlow Software Switch," *The 18th IEEE International Conference on High Performance Switching and Routing (HPSR)*, Yokohama, Japan, June 14-17, 2016.
- (20) Tomohiro Matsuno, Bijoy Chand Chatterjee, Eiji Oki, Malathi Veeraraghavan, Satoru Okamoto, Naoaki Yamanaka, "Task Allocation Scheme for Heterogeneous Hadoop Clusters," *The IEEE High Performance Switching and Routing (HPSR)*, Yokohama, Japan, June 14-17, 2016, pp. 203-208.
- (21) Shuoshuo Chen, Xiang Ji, Malathi Veeraraghavan, Steve Emmerson, Joseph Slezak, Steven G. Decker, "A Cross-Layer Multicast-Push Unicast-Pull (MPUP) Architecture for Reliable File-Stream Distribution," *The 40th IEEE Computer Society International Conference on Computers, Software & Applications (COMPSAC)*, Atlanta, GA, June 10-14, 2016, .
- (22) Fabrice Mizero, Malathi Veeraraghavan, Qian Liu, Robert D. Russell, John M. Dennis, "A Dynamic Congestion Management System for InfiniBand Networks," *Supercomputing Frontiers*, Mar. 15-18, 2016, Singapore.
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- **Refereed workshop papers/posters**

- (1) Yizhe Zhang, Malathi Veeraraghavan, Lianjun Li, Andrea Fumagalli, Michael Ripperger, Jorge Nicho (Southwest Research Institute), "Distributed Autonomous Robotic Sortation," Poster/Demo at Smart Cities Connect Conference and Expo, March 26-29, 2018, Kansas City, MO.
- (2) M. Veeraraghavan, X. Lin, and D. Kilper, "Secure Affordable Sustainable Edge Clouds (SASEC) for Smart Cities and Enterprises," *Internet2 TechX*, San Francisco, CA, Oct. 18, 2017.
- (3) M. Veeraraghavan, X. Lin, D. Kilper, "Cyber protection by dumbing down user-owned devices and leveraging edge clouds," *Poster at 2017 Defense Innovation Technology Acceleration Challenges (DITAC)*, Oct. 3-5, 2017, Tampa, Florida.
- (4) M. Veeraraghavan and A. Rodgers, "Internet and Scientific Application Drivers for Multi-Domain SDN," *NSF Large Scale Networking (LSN) Operationalizing SDN Workshop*, Washington, DC, Sept. 18-20, 2017.
- (5) Behzad Mirkhanzadeh, Chencheng Shao, Ali Shakeri, Lianjun Li, Andrea Fumagalli, Marco Tacca, Miguel Razo, Malathi Veeraraghavan, Jorge Nicho, Jonathan Meyer, Paul Evans, "Is Network Reliable Enough to Support Advanced Manufacturing Real-time Robotic Applications?" *Poster/demo at Smart Cities Innovation Summit*, Austin, TX, June 26-28, 2017.
- (6) Sourav Maji, Malathi Veeraraghavan, Molly Buchanan, Fatma Alali (UVA), Jordi Ros-Giralt, and Alan Commike, "A novel Internet access service with online traffic engineering of elephant flows," *Poster/demo at 25th GENI Engineering Conference*, Miami, FL, Mar. 14-15, 2017.
- (7) S. Chen, X. Ji, M. Veeraraghavan, S. Emmerson, "Reliable File-Stream Multicast Application Over Multipoint Software-Defined Networks (SDN)," *Internet2 TechX*, Sept. 25-28, 2016
- (8) Guthrie Alexander, Shuoshuo Chen, Malathi Veeraraghavan, Steve Emmerson, "A Cross-Layer Multicast-Push Unicast-Pull (MPUP) Architecture for Reliable File-Stream Distribution," *Poster/demo at Network Innovators Community Event (GENI NICE)*, Dec. 12, 2016, Irvine, CA.
- (9) C. Shao, R. Rahimi, A. Fumagalli, M. Veeraraghavan, J. Nicho, J. Meyer, S. Edwards, P. Evans, "Industrial Cloud Robotics across Software Defined Networks," *Poster/demo at US Ignite Application Summit*, June 13-15, 2016.
- (10) S. Tepsuporn, F. Al-Ali, M. Veeraraghavan, X. Ji, B. Cashman, A. J. Ragusa, L. Fowler, C. Guok, T. Lehman, and X. Yang. 2015, "A multi-domain SDN for dynamic layer-2 path service," In *Proceedings of the Fifth International Workshop on Network-Aware Data Management (NDM '15)*, ACM, New York, NY, USA, Article 2, 8 pages, DOI=<http://dx.doi.org/10.1145/2832099.2832101>
- (11) Malathi Veeraraghavan and Christian Esteve Rothenberg, "Abstract Topology and Cost Maps for Software-Defined Inter-Domain Circuits," *NSF SwitchON Workshop*, Sao Paulo, Brazil, Oct. 14-16, 2015
- (12) Tomohiro Matsuno, Bijoy Chand Chatterjee, Satoru Okamoto, Eiji Oki, Malathi Veeraragha-

- van, Naoaki Yamanaka, "Resource Allocation Scheme for Hadoop in Campus Networks," *21st APCC Workshop*, Kyoto, Japan, Oct. 14-16, 2015.
- (13) Qian Liu, Robert D. Russell, Fabrice Mizero, Malathi Veeraraghavan, John Dennis and Benjamin Jamroz, "Implementation of PFC and RCM for RoCEv2 Simulation in OMNeT++," OMNeT++ Community Summit 2015 (<https://summit.omnetpp.org/archive/2015/>), Zurich, Switzerland, September 3-4, 2015, <https://arxiv.org/abs/1509.03559>
 - (14) Jie Li, Malathi Veeraraghavan, Steve Emmerson, and Robert. D. Russell, "File Multicast Transport Protocol (FMTP)," *IEEE/ACM SCRAMBL Workshop* (in assoc. with CCGRID) 2015, May 4, 2015, Shenzhen, China.
 - (15) Scott Tepsuporn and Malathi Veeraraghavan, Brian Cashman, "Extending dynamic Layer-2 services to campuses," *Internet2 Focused Technical Workshop on Intl. OpenFlow/SDN Testbeds*, Miami, FL, April 1, 2015.
 - (16) Malathi Veeraraghavan, Nelson Fonseca, Andrea Fumagalli, "Communications-aware job scheduling in hybrid SDN datacenters," *NSF SwitchON workshop*, Miami, Jan. 7-8, 2015
 - (17) M. Veeraraghavan and S. Emmerson, "Distributing weather data via multipoint layer-2 paths using DYNES," *Internet2 Global Summit*, April 7, 2014
 - (18) M. Veeraraghavan and Chris Tracy, "Alpha (elephant) flow characterization," *ESCC Meeting*, Berkeley, CA, Feb. 24, 2014
 - (19) A. Fumagalli, R. Hui, M. Veeraraghavan, "Vertical integration of energy-efficient optical networking technologies into applications," *International Workshop on Optical Networking (iWON 2013)*, Atlanta, GA, Dec. 9, 2013
 - (20) Zhengyang Liu, Malathi Veeraraghavan, Jianhui Zhou, Jason Hick, Yee-Ting Li, "On causes of GridFTP transfer throughput variance," *ACM/IEEE NDM 2013* (peer-reviewed workshop in association with SC2013), Nov. 17, 2013
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- (3) "Network computing at the Digital Inclusion Workshop," Harlem Week, Silicon Harlem, NY, Aug. 8, 2018,
- (4) "Science Elastic Optical Inter-Network (SEOIN)" Oak Ridge National Labs sponsored Mini-Symposium on Data over Distance: Convergence of Networking, Storage, Transport, and Software Frameworks, July 19, 2018.
- (5) "Call for NSFnet2 and similar core networks in partner countries," NSF Global Experimen-

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- (6) “Reliable file-stream multicast of real-time data,” NSF Campus CyberInfrastructure CC* and CICI PI Workshop, Oct. 3, 2017, Albuquerque, NM.
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- (38) "CHEETAH," Joint Engineering Team Review of Optical Networking Testbeds, NSF, Washington, DC, April 19, 2005.
- (39) "CHEETAH," NSF Sponsored Planning Workshop on "The Future of Optical Communications: Understanding the Choices," Santa Barbara, April 12 & 13, 2005.
- (40) "Enabling a connection-oriented internet," Seminar at Georgia Tech, March 30, 2005.
- (41) "Enabling a connection-oriented internet," Seminar at Duke University, Feb. 11, 2005.
- (42) "CHEETAH," Exhibitor at SuperComputing 2005, Nov. 6-12, 2004.
- (43) "Immediate-request vs. scheduled calls, Short-duration vs. long-duration calls," at MCNC Workshop on GMPLS Control Plane, November 12, 2004.
- (44) Panelist on the "Optical Networks and Grid Computing Panel," Broadnets 2004, Oct. 25-29, 2004.
- (45) "Use of SONET/SDH and WDM networks for fast end-to-end file transfers," Hong Kong University of Science and Technology, July 28, 2000.
- (46) "Use of SONET/SDH and WDM networks for fast end-to-end file transfers," Tsinghua University, July 26, 2000.
- (47) "Advances in connection-oriented networking," Princeton University, Princeton, NJ, Oct. 16, 97.
- (48) "Mobile location management in ATM Networks," Brooklyn Polytechnic University, Nov. 25, 97.
- (49) "Connectionless ATM using an ATM Switch Router," University of Genoa, Italy, May 20, 97.
- (50) "Location Management for Mobile ATM Networks," Politecnico di Milano, Italy, May 19, 97.
- (51) "Configuration Management Issues in ATM-Based PCNs," Panel on "Managing Mobility," *The Fifth IFIP/IEEE Intl Symp. on Integrated Network Management (IM'97)*, San Diego, May 12-16, 1997.

- (52) "Distributed Call Processing Architecture," TINA-C group, Bellcore, June 96.
- (53) "Mobility and Connection Management in a Wireless ATM LAN," Univ. of California at Davis, March 96.
- (54) "Distributed Call Processing Architecture for ATM Networks and PCNs," UCLA, Feb. 96.
- (55) "Parallel Connection Control for ATM Networks," Curtin Institute of Technology, Perth, Australia, Feb. 96.
- (56) "Parallel Connection Control for ATM Networks," Telstra Research Labs, Melbourne, Australia, Feb. 96.
- (57) "Control-Plane Aspects of ATM Networks," NTT Labs, Tokyo, Nov. 95
- (58) "BAHAMA: A Wireless ATM LAN," HP Labs, Palo Alto, June 95.
- (59) "Call and Connection Control of ATM Networks," University of Connecticut, Storrs, November 93.

PROFESSIONAL SERVICE

• Significant External Roles

- Steering Committee Member, IEEE High-Performance Switching and Routing (HPSR) Conference, 2017-2020.
- NSF Third Global Experimentation for Future Internet (GEFI) Workshop Federated Testbed of Elastic Optical Networks Session Organizer and Report Author, Oct. 25-26, 2018.
- Technical Program Committee Member, 42nd and 43rd IEEE International Conference on Computers, Software and Applications (COMPSAC) 2018 and 2019
- NSF Campus CyberInfrastructure (CC*) and Cybersecurity Innovation for Cyberinfrastructure (CICI) PI Meeting Advisory Group Member 2018
- Panel Moderator, Data Integration Panel, NSF Campus CyberInfrastructure CC* and CICI PI Workshop, Albuquerque, NM, Oct. 3, 2017.
- Technical Program Committee Co-Chair, IEEE HPSR 2017, Campinas, Brazil.
- Workshop Co-Chair, IEEE/ACM Innovating the Network for Data Intensive Science (INDIS), held in conjunction with SuperComputing 2017, Nov. 12, 2017, Denver, CO.
- NSF Workshop, "US/Japan Workshop Trustworthy Networking for Smart and Connected Communities (S&CC)," Mar. 7-8, 2016, San Mateo, CA.
- Organizer, NSF Workshop, "US/Japan Workshop Trustworthy Networking for Smart and Connected Communities (S&CC)," Mar. 7-8, 2016, San Mateo, CA.
- Track Discussion Leader, NSF Workshop on Workshop on Applications and Services in the Year 2021, Jan. 27-28, 2016, Washington, DC (Invited; required one-page white paper, "New applications and services leveraging SDI technologies")
- Participant, DOE Workshop on Network Research Problems and Challenges for DOE Scientists, Feb. 1-2, 2016, Bethesda, MD (Invited; required white paper, "Position paper for the DOE Network 2025 Challenges Workshop)
- Participant, NSF Workshop on Software Defined Infrastructure/Software Defined Exchanges (SDI/SDX), Feb. 4-5, 2016, Washington, DC (Invited; required one-page white paper, "Multi-domain, multi-layer software-defined infrastructure")

- Technical Program Committee Co-Chair, IEEE BlackSeaCom 2016
- Tutorials Chair, IEEE HPSR 2016
- Technical Program Committee Co-Chair, ACM Innovating the Network for Data Intensive Science (INDIS) 2016
- Program Committee Co-Chair, Internet2 Technology Exchange 2016
- Technical Program Committee Member, ACM/IEEE Super Computing 2015
- Technical Program Committee Co-Chair, IEEE ICC NGN Symposium, 2013
- Executive Committee, NSF PerfSONAR Workshop, 2010
- Associate Editor, IEEE/ACM Transactions on Networking, 2006-2008
- Research Advisory Panel, Internet2 HOPI (Hybrid Optical Packet Infrastructure), 2007-2008
- Technical Program Chair (TPC) Chair for Broadnets Applications/Services Symposium, 2005
- TPC Chair for IEEE ICC2002, New York, April 28-May 2, 2002 (handled over 1500 submissions)
- General Chair, IEEE Computer Communications Workshop 2001
- Strategic Planning Committee, IEEE Communications Society
- IEEE ComSoc. e-News Editor, IEEE Communications Surveys Area Editor, Dec. 1999-Dec. 2001
- General Co-Chair, 9th IEEE Workshop on Local & Metropolitan Area Networks. Banff, Alberta, May 17-20, 1998
- Associate Editor for IEEE Transactions on Reliability from 1992-1994
- Served on program and organizing committees of several conferences/workshops, NSF and DOE panels
- Reviewer for many conferences and journals
- Senior Member of IEEE
- Newsletter Editor for the IEEE Columbus Chapter, 1991-1992
- **Significant Internal Roles at University of Virginia**
 - Associate Director, Data Infrastructure and Services, Data Science Institute 2016-present
 - Provost's Office, VPR Internal Review Committee, 2016-2018
 - School of Engineering and Applied Science (SEAS), Promotions & Tenure Committee, 2015-2018
 - SEAS Dean's Research Advisory Committee, 2014-2017
 - Charles L. Brown Electrical and Computer Engineering (ECE) Department, Faculty Peer Review Committee, Chair in 2015, Member in 2014.

GRADUATED STUDENTS

- **Ph.D. students**

- (1) Sourav Maji, University of Virginia, “Characterization, Management, and Online Traffic Engineering of Heavy-Hitter Flows in Software Defined Networks,” Aug. 2018
- (2) Zhenzhen Yan, University of Virginia, “Traffic Engineering in Packet/Circuit Hybrid Networks,” Dec. 2013
- (3) Jie Li, University of Virginia, “Advances in Inter-domain Networking,” Dec. 2013
- (4) Mark McGinley, University of Virginia, “On Providing Fair Circuit/Virtual-Circuit Networking Services,” May 2012
- (5) Xiudian Fang, University of Virginia, “On Using Circuit-switched Networks for File Transfers,” Dec. 2008 (defended in Sept. 08).
- (6) Xiangfei Zhu, University of Virginia, “A Study of Bandwidth-Sharing Mechanisms in Connection-Oriented Networks,” May 2008.
- (7) Tao Li, University of Virginia, Thesis: “Analysis and Implementation of Multiplexing Techniques in Connection-Oriented Communication Networks,” Aug. 2006.
- (8) Haobo Wang, Polytechnic University, Thesis: “Hardware-Accelerated Signaling: Design, Implementation and Implications,” Nov. 2004.
- (9) Hojun Lee, Polytechnic University, Thesis: “Scheduling file transfers on a circuit-switched network,” May 2004.
- (10) Xuan Zheng, University of Virginia, Thesis: “Enabling New Applications with Optical Circuit-Switched Networks,” May 2004.
- (11) Gopal Dommety, Ohio State University, Thesis: “Efficient Techniques for Supporting Mobile Hosts in Hierarchically Organized Networks,” Mar 1998. Gopal did his research work under my guidance and financial support at Bell Labs.

- **Masters students**

- (1) Yizhe Zhang, University of Virginia, “Gilbreth: A Conveyor-Belt Based Pick-and-Sort Industrial Robotics Application,” Oct. 2018.
- (2) Fatma Alali, University of Virginia, “A Cross-Layer Design for Large Data Transfers,” MS, Computer Engineering, May 2016
- (3) Shuoshuo Chen, University of Virginia, “A Cross-Layer Architecture and Protocols for Reliable File-Stream Distribution,” MS, Computer Engineering, May 2016.
- (4) Xiang Ji, University of Virginia, “On Using Software Defined Networks for File-stream Distribution,” MS, Computer Engineering, May 2016
- (5) Fabrice Mizero, University of Virginia, ME, Computer Engineering, May 2016.
- (6) Zhe Song, University of Virginia, ME, Computer Engineering, “Routing protocols for scheduled dynamic circuit service,” Aug. 2014
- (7) Tian Jin, University of Virginia, “Traffic Engineering and Characterization of High-Rate Large-Sized Flows, MS, Comp. Sc., Dec. 2013
- (8) Zhengyang Liu, University of Virginia, “A study on causes of GridFTP transfer throughput variance,” MCS, Dec. 2013
- (9) Helali Bhuiyan, University of Virginia, ME, Computer Engineering, “Transport Protocols over Circuits/VCS,” M. Eng. Comp. Engineering, Aug. 7, 2007
- (10) Mark McGinley, University of Virginia, ME, Computer Engineering, “BWdetail: A bandwidth tester with detailed reporting,” April 19, 2007.

- (11) Xiudian Fang, University of Virginia, "A Study of Applications for Optical Circuit-Switched Networks," MS, Comp. Sc., May 2006.
- (12) Zhanxiang Huang, University of Virginia, "End-host Route Selection in the CHEETAH networking solution," MCS, May 2006.
- (13) Anant P. Mudambi, University of Virginia, "Transport protocols for dedicated circuits," MS, Computer Engineering, Dec. 2005.
- (14) Xiangfei Zhu, "End-to-End GMPLS Signaling in the CHEETAH project," University of Virginia, MCS, May 2005.
- (15) Reinette Grobler, University of Pretoria, CATT Scholar, Polytechnic University, 2000-2001, Thesis: "Signaling and Scheduling for Efficient Bulk Data Transfer in Circuit-Switched Networks," Aug. 2000. Won the "S2A3 bronze medal for the best Masters dissertation in the various sciences (Medicine, Natural, Engineering, etc.);" University of South Africa, 2000. SA3 stands Southern Africa Association for the Advancement of Science. Reinette did her research work under my guidance and financial support at Polytechnic University.
- (16) Rimma Iontel, Polytechnic University, Honors Student, Thesis: "Performance Testing of Signaling Transfer Points used in Signaling System No. 7 (SS7) Networks," June 2001.
- (17) Nabeel Cocker, Polytechnic University, Honors Student, Thesis: "Carrying Voice on IEEE 802.11 Wireless Local Area Networks," June 2001.
- (18) Ramesh Badri, Polytechnic University, Thesis: "Automating SS7 STP Interoperability Test Results Analysis," October 2001.

- **Other role:**

- (1) Examined Ph.D. thesis by Alex Lam, "Protocol Design and Implementation Architecture for High Speed Wireless MAC," March 2001, Macquarie University, Sydney, Australia.
- (2) Examined Ph.D. thesis by M. Hogan, "Support of Integrated Services by B-ISDN CPE," 31 March 1996, Macquarie University, Sydney, Australia.

RESEARCH SCIENTISTS, VISITORS and POST-DOCTORAL FELLOWS

- Michele Co, DARPA P-CORE Project and NSF Projects, started May 2018.
- Will Hawkins, Research Scientist, DARPA P-CORE Project, started June 2018.
- Alastair Nottingham, Research Scientist, DARPA P-CORE Project, started June 2018.
- Xiao Lin, Ph.D. Student, Shanghai Jiaotong University, China, 2016-2017.
- Prof. Naoaki Yamanaka, Keio University, Japan, 2016, 2017.
- Prof. Weiqiang Sun, Shanghai Jiaotong University, China, 2016.
- Takahiro Miyazaki, MS Student, Keio University, Japan, 2015.
- Dr. Tao Li, Post-Doctoral Fellow, 2006-2008.
- Dr. Xuan Zheng, Post-Doctoral Fellow, 2004-2006.
- Prof. Suresh Rai, LSU, while I was at Bell Labs, 1998.
- Prof. Zhiseng Niu, Tsinghua Univ., China, 2001.

CURRENT GRADUATE STUDENTS

- Xiaoyu Wang, Ph.D. student, started Aug. 2014
- Fatma Al-Ali, Ph.D. student, started May 2016
- Yuanlong Tan, Ph.D student, started Aug. 2017
- Brendan Abraham, MS student, started Aug. 2017
- Yizhe Zhang, Ph.D. student, started Aug. 2018
- Ying Lin, M.E. student, started May 2018

UNDERGRADUATE RESEARCH STUDENTS & SENIOR PROJECT THESES:

- 2018: John (Jack) Morris, Curtis Kahn, Jiaxu (Josie) Li
- 2017: Hong Jik Lee, Lindsey Maxwell
- 2015-2016: Molly Buchanan, Zihan Ni, Ryan Aubrey
- 2013-2014: Scott Tepsuporn, Leiqing Cai, Zihao Wang, Yicheng Liang, Andy Barron, Ranjana Addanki, Tianqi Wang, Xin Song, Hanke (Casey) Meng
- 2012-2013: Tyler Clinch, Amanda McCormack, Paul Bozzay, Shuquan Huang
- 2011: J. Gradon Koelling, “Computer and Internet Usage by Researchers at the University of Virginia and its Implications”, Senior thesis
- 2011: Peter Sahajian, Xavier Lee, James Scott, Research students.
- Montgomery Johns, “Experimenting with high-speed optical connections and network configurations to study data transfer performance,” 2010.
- Hok Sum (Stanley) Chau, “Design and implementation of a traffic matrix generation system for Internet Service Providers,” 2009.
- Eric Karlinsky, “Digital Video Streaming System on Commodity Hardware Using DVTS Software,” 2008.
- Bryan Lin, “Configuring Policy-Based Routing Controllers for Flexible Network-Routing Applications,” 2008.
- Robert Gisiger, “Improving Internet Performance using Web-Caching and a Connection-Oriented Network,” 2007.
- Matt Greenfield, “Monitoring the Reliability of High-Speed Networks,” 2007.
- Thinh Ho, “A Router Traffic Monitor,” 2007.
- Marko Milko, “Bandwidth control within a Summit switch Ethernet network,” 2007
- Wesley Chi, “Extracting Usage Time Data from the CHEETAH Network,” 2007
- Albert Ho, “Bluetooth Communication in Vehicles: The Development of a Mechanism for Communication Among Vehicles in Motion,” 2006.
- Robert Anthony, “Determine Real-Time Network Performance Factors,” 2006.
- Mike Wolyneec, “Designing Applications for Connection-Oriented Networks,” 2006.
- Erik Halseth, “Factors of Bandwidth Performance Constraints over Gigabit Networks,” 2006.

- Sukhoon Oh, “Security in VoIP Networks,” 2006.
- Lihan Li, “Internet Piracy: An Analysis of Possible Solutions,” 2006.
- Matt Eaton, “An Opportunistic Peer-to-Peer Electronic Conferencing System,” 2006.
- Albert Varma, “Probing Host-To-Host Network Pathways: Gathering Network Statistics for the Routing Decision Module for CHEETAH,” 2006.
- Chris Dahl (still ongoing; started in Spring 2006).
- Andrew Love, “Video Telephony: Ethernet-based Quality of Service,” 2005.
- Russ Glorioso, “A Hardware Accelerated Implementation of the Resource Reservation Protocol - Traffic Engineering Signaling Protocol,” 2005.
- Shen-Wei (Victor) Huang, “IEEE 802.11 Wireless LAN Studies,” 2005.
- Yanpeng (Roger) Guo, “Scientists' Reliable Network Infrastructure: End-host Software of High-speed CHEETAH,” 2005.
- Stephen Gaborik, “Development of an Advanced Multimedia Video-Telephony Setup, 2004.
- Yixing Qin: “Test Software Development for a Gigabit/second Networking Card,” 2004.
- Jean Anostere, Polytechnic University of New York, 2001.
- Yong Yi Zeng, Polytechnic University of New York, 2001.
- John Kuok, Polytechnic University of New York, 2001.
- Joga Hayre, Polytechnic University of New York, 2000.
- Niket Desai, Polytechnic University of New York, 2000.