

Stanford



Nick McKeown

Kleiner Perkins, Mayfield, Sequoia Capital Professor in the School of Engineering and Professor of Computer Science, Emeritus
Electrical Engineering

Bio

BIO

McKeown researches techniques to improve the Internet. Most of this work has focused on the architecture, design, analysis, and implementation of high-performance Internet switches and routers. More recently, his interests have broadened to include network architecture, backbone network design, congestion control, and how the Internet might be redesigned if we were to start with a clean slate.

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Electrical Engineering

HONORS AND AWARDS

- Fellow, American Academy of Arts and Sciences (2015)
- Honorary PhD, ETH (Zurich) (2014)
- Lifetime Achievement Award, ACM Sigcomm (2012)
- Fellow, National Academy of Engineering (NAE) (2010)
- Computers and Communications Award, IEEE Koji Kobayashi (2009)
- ACM Fellow Lovelace Medal, British Computer Society (2007)
- Fellow, IEEE (2005)
- Fellow, Royal Academy of Engineering (UK) (2005)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Board Member, P4 Language Consortium (P4.org) (2014 - present)
- Board Member, Open Networking Lab (ON.Lab) (2013 - present)
- Board Member, Open Networking Foundation (ONF) (2010 - present)

PROFESSIONAL EDUCATION

- PhD, UC Berkeley (1995)

Teaching

STANFORD ADVISEES

Doctoral (Program)

Gedeon Nyengele, Sundararajan Renganathan

Publications

PUBLICATIONS

- **The nanoPU: A Nanosecond Network Stack for Datacenters**
Ibanez, S., Mallery, A., Arslan, S., Jepsen, T., Shahbaz, M., Kim, C., McKeown, N., USENIX ASSOC
USENIX ASSOC.2021: 239-256
- **Using Deep Programmability to Put Network Owners in Control** *ACM SIGCOMM COMPUTER COMMUNICATION REVIEW*
Foster, N., McKeown, N., Rexford, J., Parulkar, G., Peterson, L., Sunay, O.
2020; 50 (4): 82–88
- **From Ethane to SDN and Beyond** *ACM SIGCOMM COMPUTER COMMUNICATION REVIEW*
Casado, M., McKeown, N., Shenker, S.
2019; 49 (5): 92–95
- **Sizing Router Buffers (Redux)** *ACM SIGCOMM COMPUTER COMMUNICATION REVIEW*
McKeown, N., Appenzeller, G., Keslassy, I.
2019; 49 (5): 69–74
- **Learning Networking by Reproducing Research Results** *ACM SIGCOMM COMPUTER COMMUNICATION REVIEW*
Yan, L., McKeown, N.
2017; 47 (2): 19–26
- **Programming Protocol-Independent Packet Processors** *ACM SIGCOMM COMPUTER COMMUNICATION REVIEW*
Bosshart, P., Daly, D., Gibb, G., Izzard, M., McKeown, N., Rexford, J., Schlesinger, C., Talayco, D., Vahdat, A., Varghese, G., Walker, D.
2014; 44 (3): 87-95
- **Header Space Analysis: Static Checking for Networks**
Kazemian, P., Varghese, G., McKeown, N.
2012
- **Ethane: Taking control of the enterprise** *ACM SIGCOMM 2007 Conference*
Casado, M., Freedman, M. J., Pettit, J., Luo, J., McKeown, N., Shenker, S.
ASSOC COMPUTING MACHINERY.2007: 1–12
- **Achieving 100% throughput in an input-queued switch** *INFOCOM 96 Conference*
McKeown, N., Mekkittikul, A., Anantharam, V., Walrand, J.
IEEE-INST ELECTRICAL ELECTRONICS ENGINEERS INC.1999: 1260–67
- **Updating the theory of buffer sizing** *PERFORMANCE EVALUATION*
Spang, B., Arslan, S., McKeown, N.
2021; 151
- **Democratizing the Network Edge** *ACM SIGCOMM COMPUTER COMMUNICATION REVIEW*
Peterson, L., Anderson, T., Katti, S., McKeown, N., Parulkar, G., Rexford, J., Satyanarayanan, M., Sunay, O., Vandat, A.
2019; 49 (2): 31–36
- **Frequency Stabilized Lasers for Coherent Fiber Interconnects in the Datacenter**
Blumenthal, D. J., Ballani, H., Behunin, R., Bowers, J. E., Costa, P., Lenoski, D., McKeown, N., Morton, P., Papp, S. B., Rakich, P. T., IEEE
IEEE.2019
- **The P4 -> NetFPGA Workflow for Line-Rate Packet Processing**
Ibanez, S., Brebner, G., McKeown, N., Zilberman, N., ACM
ASSOC COMPUTING MACHINERY.2019: 1–9
- **The PyramidSnapshot Challenge: Understanding student process from visual output of programs**
Yan, L., McKeown, N., Piech, C., Assoc Comp Machinery
ASSOC COMPUTING MACHINERY.2019: 119–25

- **The Case for a Network Fast Path to the CPU**
Ibanez, S., Shahbaz, M., McKeown, N., ACM
ASSOC COMPUTING MACHINERY.2019: 52–59
- **Event-Driven Packet Processing**
Ibanez, S., Antichi, G., Brebner, G., McKeown, N., ACM
ASSOC COMPUTING MACHINERY.2019: 133–40
- **p4v: practical verification for programmable data planes** *SIGCOMM '18 Proceedings of the 2018 Conference of the ACM Special Interest Group on Data Communication*
Liu, J., Hallahan, W., Schlesinger, C., Sharif, M., Lee, J., Soulé, R., Wang, H., Caşcaval, C., McKeown, N., Foster, N.
2018: 490-503
- **TMOSS: Using Intermediate Assignment Work to Understand Excessive Collaboration in Large Classes**
Yan, L., McKeown, N., Sahami, M., Piech, C., Assoc Comp Machinery
ASSOC COMPUTING MACHINERY.2018: 110–15
- **PISCES: A Programmable, Protocol-Independent Software Switch**
Shahbaz, M., Choi, S., Pfaff, B., Kim, C., Feamster, N., McKeown, N., Rexford, J., ACM
ASSOC COMPUTING MACHINERY.2016: 525–38
- **Packet Transactions: High-Level Programming for Line-Rate Switches**
Sivaraman, A., Cheung, A., Budiu, M., Kim, C., Alizadeh, M., Balakrishnan, H., Varghese, G., McKeown, N., Licking, S., ACM
ASSOC COMPUTING MACHINERY.2016: 15–28
- **Programmable Packet Scheduling at Line Rate**
Sivaraman, A., Subramanian, S., Alizadeh, M., Chole, S., Chuang, S., Agrawal, A., Balakrishnan, H., Edsall, T., Katti, S., McKeown, N., ACM
ASSOC COMPUTING MACHINERY.2016: 44–57
- **Neutral Net Neutrality**
Yiakoumis, Y., Katti, S., McKeown, N., ACM
ASSOC COMPUTING MACHINERY.2016: 483–96
- **Virtualized Congestion Control**
Cronkite-Ratcliff, B., Bergman, A., Vargaftik, S., Ravi, M., McKeown, N., Abraham, I., Keslassy, I., ACM
ASSOC COMPUTING MACHINERY.2016: 230–43
- **Flow Caching for High Entropy Packet Fields** *ACM SIGCOMM Workshop on Hot Topics in Software Defined Networking (HotSDN)*
Shelly, N., Jackson, E. J., Koponen, T., McKeown, N., Rajahalme, J.
ASSOC COMPUTING MACHINERY.2014
- **A Buffer-Based Approach to Rate Adaptation: Evidence from a Large Video Streaming Service** *SIGCOMM Conference*
Huang, T., Johari, R., McKeown, N., Trunnell, M., Watson, M.
ASSOC COMPUTING MACHINERY.2014: 187–98
- **OSNT: Open Source Network Tester** *IEEE NETWORK*
Antichi, G., Shahbaz, M., Geng, Y., Zilberman, N., Covington, A., Bruyere, M., McKeown, N., Feamster, N., Felderman, B., Blott, M., Moore, A. W., Owezarski, P.
2014; 28 (5): 6-12
- **BeHop: A Testbed for Dense WiFi Networks** *MOBILE COMPUTING AND COMMUNICATIONS REVIEW*
Yiakoumis, Y., Bansal, M., Covington, A., van Reijndam, J., Katti, S., McKeown, N.
2014; 18 (3): 71–80
- **Automatic Test Packet Generation** *IEEE-ACM TRANSACTIONS ON NETWORKING*
Zeng, H., Kazemian, P., Varghese, G., McKeown, N.
2014; 22 (2): 554-566
- **Maturing of OpenFlow and Software-defined Networking through deployments** *COMPUTER NETWORKS*
Kobayashi, M., Seetharaman, S., Parulkar, G., Appenzeller, G., Little, J., van Reijndam, J., Weissmann, P., McKeown, N.

2014; 61: 151-175

- **Enlarging the SIGCOMM Tent** *ACM SIGCOMM COMPUTER COMMUNICATION REVIEW*
McKeown, N.
2014; 44 (1): 63-65
- **Using Network Knowledge to Improve Workload Performance in Virtualized Data Centers**
Erickson, D., Heller, B., McKeown, N., Rosenblum, M., IEEE
IEEE.2014: 185–94
- **Rethinking IP Core Networks** *JOURNAL OF OPTICAL COMMUNICATIONS AND NETWORKING*
Das, S., Parulkar, G., McKeown, N.
2013; 5 (12): 1431-1442
- **pFabric: Minimal Near-Optimal Datacenter Transport** *SIGCOMM Conference*
Alizadeh, M., Yang, S., Sharif, M., Katti, S., McKeown, N., Prabhakar, B., Shenker, S.
ASSOC COMPUTING MACHINERY.2013: 435–46
- **Forwarding Metamorphosis: Fast Programmable Match-Action Processing in Hardware for SDN** *SIGCOMM Conference*
Bosshart, P., Gibb, G., Kim, H., Varghese, G., McKeown, N., Izzard, M., Mujica, F., Horowitz, M.
ASSOC COMPUTING MACHINERY.2013: 99–110
- **Rethinking IP Core Networks** *Journal of Optical Communications and Networking*
Das, S., Parulkar, G., McKeown, N.
2013: 12
- **Scheduling Packets over Multiple Interfaces while Respecting User Preferences**
Yap, K., Huang, T., Yiakoumis, Y., Chinchali, S., McKeown, N., Katti, S., ACM
ASSOC COMPUTING MACHINERY.2013: 109–20
- **Architecture for an Open Source Network Tester**
Shahbaz, M., Antichi, G., Geng, Y., Zilberman, N., Covington, A., Bruyere, M., Feamster, N., McKeown, N., Felderman, B., Blott, M., Moore, A. W., Owezarski, P., IEEE
IEEE.2013: 123-+
- **Design Principles for Packet Parsers** *9th ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS)*
Gibb, G., Varghese, G., Horowitz, M., McKeown, N.
IEEE.2013: 13–24
- **Real Time Network Policy Checking using Header Space Analysis**
Kazemian, P., Chang, M., Zeng, H., Varghese, G., McKeown, N., Whyte, S.
2013
- **Design Principles for Packet Parsers**
Gibb, G., Varghese, G., Horowitz, M., McKeown, N.
2013
- **Late-binding: how to lose fewer packets during handoff**
Yap, K., Huang, T., Yiakoumis, Y., McKeown, N., Katti, S.
2013
- **Forwarding metamorphosis: fast programmable match-action processing in hardware for SDN**
Bosshart, P., Gibb, G., Kim, H. S., Varghese, G., McKeown, N., Izzard, M.
2013
- **Downton Abbey Without the Hiccups: Buffer-Based Rate Adaptation for HTTP Video Streaming**
Huang, T., Johari, R., McKeown, N.
2013
- **Leveraging SDN Layering to Systematically Troubleshoot Networks**
Heller, B., Scott, C., McKeown, N., Shenker, S., Wundsam, A., Zeng, H.

2013

- **pFabric: minimal near-optimal datacenter transport**
Alizadeh, M., Yang, S., Sharif, M., Katti, S., McKeown, N., Prabhakar, B.
2013
- **The Controller Placement Problem** *COMPUTER COMMUNICATION REVIEW*
Heller, B., Sherwood, R., McKeown, N.
2012; 42 (4): 473-478
- **Making Use of All the Networks Around Us: A Case Study in Android** *COMPUTER COMMUNICATION REVIEW*
Yap, K., Huang, T., Kobayashi, M., Yiakoumis, Y., McKeown, N., Katti, S., Parulkar, G.
2012; 42 (4): 455-460
- **SDN Based Unified Control Architecture** *25th IEEE Photonics Conference (IPC)*
Das, S., Parulkar, G., McKeown, N.
IEEE.2012: 778-779
- **Why OpenFlow/SDN Can Succeed Where GMPLS Failed** *38th European Conference and Exhibition on Optical Communications (ECOC)*
Das, S., Parulkar, G., McKeown, N.
IEEE.2012
- **Why OpenFlow/SDN Can Succeed Where GMPLS Failed** *ECOC Technical Digest*
Das, S., Parulkar, G., McKeown, N.
2012: 3
- **Maturing of OpenFlow and Software Dened Networking through Deployments** *Elsevier*
Kobayashi, M., Seetharaman, S., Parulkar, G., Appenzeller, G., van Reijendam, J. J., Weissmann, P., McKeown, N. W.
2012; 14: 50
- **Reproducible Network Experiments using Container Based Emulation**
Handigol, N., Heller, B., Jeyakumar, V., Lantz, B., McKeown, N.
2012
- **Putting Home Users in Charge of their Network**
Yiakoumis, Y., Huang, T., Yap, K., Katti, S., Johari, R., McKeown, N.
2012
- **Automatic Test Packet Generation**
Zeng, H., Kazemian, P., Varghese, G., McKeown, N.
2012
- **Outsourcing Network Functionality**
Gibb, G., Zeng, H., McKeown, N.
2012
- **Confused, Timid, and Unstable: Picking a Video Streaming Rate is Hard**
Huang, T., Handigol, N., Heller, B., McKeown, N., Johari, R.
2012
- **Where is the Debugger for my Software-Defined Network?** *HotSDN 2012, Helsinki, Finland (Best Student Presentation Award)*
Handigol, N., Heller, B., Jeyakumar, V., Mazieres, D., McKeown, N.
2012: 6
- **Deconstructing Datacenter Packet Transport** *11th ACM SIGCOMM Workshop on Hot Topics in Networks (HotNets)*
Alizadeh, M., Yang, S., Katti, S., McKeown, N., Prabhakar, B., Shenker, S.
ASSOC COMPUTING MACHINERY.2012: 133-138
- **Multi-Server Generalized Processor Sharing** *24th International Teletraffic Congress (ITC)*
Yap, K., McKeown, N., Katti, S.

IEEE COMPUTER SOC.2012: 161–168

- **MPLS-TE and MPLS VPNs with OpenFlow** *COMPUTER COMMUNICATION REVIEW*
Sharafat, A. R., Das, S., Parulkar, G., McKeown, N.
2011; 41 (4): 452–453
- **Optimizing a Virtualized Data Center** *COMPUTER COMMUNICATION REVIEW*
Erickson, D., Heller, B., Yang, S., Chu, J., Ellithorpe, J., McKeown, N., Parulkar, G., Rosenblum, M., Whyte, S., Stuart, S.
2011; 41 (4): 478–479
- **INTERPRETATION OF REFLECTANCE SPECTRA OF CLAY MINERAL-SILICA MIXTURES: IMPLICATIONS FOR MARTIAN CLAY MINERALOGY AT MAWRTH VALLIS** *CLAYS AND CLAY MINERALS*
McKeown, N. K., Bishop, J. L., Cuadros, J., Hillier, S., Amador, E., Makarewicz, H. D., Parente, M., Silver, E. A.
2011; 59 (4): 400–415
- **Architecting for Innovation** *COMPUTER COMMUNICATION REVIEW*
Koponen, T., Shenker, S., Balakrishnan, H., Feamster, N., Ganichev, I., Ghodsi, A., Godfrey, P. B., McKeown, N., Parulkar, G., Raghavan, B., Rexford, J., Arianfar, S., Kuptsov, et al
2011; 41 (3): 24–36
- **Integrated Photonics for Low-Power Packet Networking** *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS*
Blumenthal, D. J., Barton, J., Beheshti, N., Bowers, J. E., Burmeister, E., Coldren, L. A., Dummer, M., Epps, G., Fang, A., Ganjali, Y., Garcia, J., Koch, B., Lal, et al
2011; 17 (2): 458–471
- **Application-Aware Aggregation and Traffic Engineering in a Converged Packet-Circuit Network**
Das, S., Yiakoumis, Y., Parulkar, Guru, M., Singh, P., Getachew, D., Desai, P. D., McKeown, N. W.
2011
- **Slicing Home Networks**
Yiakoumis, Y., Yap, K., Katti, S., Parulkar, G., McKeown, N.
2011
- **Separating Authentication, Access and Accounting: A Case Study with OpenWiFi** *Stanford University NEC OPENFLOW-TR*
Yap, K., Yiakoumis, Y., Kobayashi, M., Katti, S., Parulkar, G., McKeown, N.
2011: 6
- **Initial thoughts on custom network processing via waypoint services**
Gibb, G., Zeng, H., McKeown, N.
2011
- **MPLS with a Simple OPEN Control Plane**
Das, S., Sharafat, A. R., Parulkar, Guru, M., McKeown, N.
2011
- **Optical Packet Buffers for Backbone Internet Routers** *IEEE-ACM TRANSACTIONS ON NETWORKING*
Beheshti, N., Burmeister, E., Ganjali, Y., Bowers, J. E., Blumenthal, D. J., McKeown, N.
2010; 18 (5): 1599–1609
- **Ripcord: A Modular Platform for Data Center Networking** *ACM SIGCOMM 2010 Conference 2010*
Heller, B., Erickson, D., McKeown, N., Griffith, R., Ganichev, I., Shenker, S., Zarifis, K., Moon, D., Whyte, S., Stuart, S.
ASSOC COMPUTING MACHINERY.2010: 457–58
- **OpenRoads: Empowering Research in Mobile Networks** *COMPUTER COMMUNICATION REVIEW*
Yap, K., Kobayashi, M., Sherwood, R., Huang, T., Chan, M., Handigol, N., McKeown, N.
2010; 40 (1): 125–126
- **Can the Production Network Be the Testbed?**
Sherwood, R., Gibb, G., Yap, K., Appenzeller, G., Casado, M., McKeown, N.
2010

- **A Network in a Laptop: Rapid Prototyping for Software-Defined Networks.**
Lantz, B., Heller, B., McKeown, N.
2010
- **ElasticTree: Saving Energy in Data Center Networks**
Heller, B., Seetharaman, S., Mahadevan, P., Yiakoumis, Y., Sharma, P., Banerjee, S., McKeown, N. W.
2010
- **Towards Software-Friendly Networks**
Yap, K., Huang, T., Dodson, B., Lam, Monica, S., McKeown, N.
2010
- **PhoneNet: a Phone-to-Phone Network for Group Communication within an Administrative Domain**
Huang, T., Yap, K., Dodson, B., Lam, Monica, S., McKeown, N.
2010
- **OpenPipes: Making Distributed Hardware Systems Easier.**
Gibb, G., McKeown, N.
2010
- **Blueprint for Introducing Innovation into Wireless Mobile Networks**
Chan, M., Handigol, N., McKeown, N., Parulkar, G.
2010
- **FPGA Research Design Platform Fuels Network Advances** *Xcell Journal, Fourth Quarter*
Blott, M., Ellithorpe, J., McKeown, N., Vissers, K., Zeng, H.
2010: 6
- **Delivering Capacity for the Mobile Internet by Stitching Together Networks**
Yap, K., Katti, S., Parulkar, G., McKeown, N.
2010
- **Experimental Demonstration of OpenFlow Control of Packet and Circuit Switches** *Conference on Optical Fiber Communication (OFC)/ Collocated National Fiber Optic Engineers (NFOEC)*
Gudla, V., Das, S., Shastri, A., Parulkar, G., McKeown, N., Kazovsky, L., Yamashita, S.
IEEE.2010
- **Packet and Circuit Network Convergence with OpenFlow** *Conference on Optical Fiber Communication (OFC)/Collocated National Fiber Optic Engineers (NFOEC)*
Das, S., Parulkar, G., McKeown, N., Singh, P., Getachew, D., Ong, L.
IEEE.2010
- **Rethinking Enterprise Network Control** *IEEE-ACM TRANSACTIONS ON NETWORKING*
Casado, M., Freedman, M. J., Pettit, J., Luo, J., Gude, N., McKeown, N., Shenker, S.
2009; 17 (4): 1270-1283
- **The Stanford OpenRoads Deployment** *4th ACM International Workshop on Wireless Network Testbeds, Experimental Evaluation and Characterization (WiNTECH 2009)*
Yap, K., Kobayashi, M., Underhill, D., Seetharaman, S., Kazemian, P., McKeown, N.
ASSOC COMPUTING MACHINERY.2009: 59–66
- **Encouraging Reusable Network Hardware Design** *IEEE International Conference on Microelectronic Systems Education*
Covington, G. A., Gibb, G., Naous, J., Lockwood, J. W., McKeown, N.
IEEE.2009: 29–32
- **Unifying Packet and Circuit Switched Networks** *IEEE Globecom Workshops (Gc Workshops 2009)*
Das, S., Parulkar, G., McKeown, N.
IEEE.2009: 33–38
- **Simple Unified Control for Packet and Circuit Networks** *Digest of the LEOS Summer Topical Meeting*

- Das, S., Parulkar, G., McKeown, N.
IEEE.2009: 147–148
- **Delegating Network Security with More Information** *1st Workshop Research on Enterprise Networking*
Naous, J., Stutsman, R., Mazieres, D., McKeown, N., Zeldovich, N.
ASSOC COMPUTING MACHINERY.2009: 19–26
 - **Viewpoint Scaling the Academic Publication Process to Internet Scale** *COMMUNICATIONS OF THE ACM*
Crowcroft, J., Keshav, S., McKeown, N.
2009; 52 (1): 27-30
 - **Buffer Sizing results for RCP Congestion Control under Connection Arrivals and Departures** *COMPUTER COMMUNICATION REVIEW*
Lakshmikantha, A., Srikant, R., Dukkipati, N., McKeown, N., Beck, C.
2009; 39 (1): 6-15
 - **A Packet Generator on the NetFPGA Platform** *17th Annual IEEE Symposium on Field Programmable Custom Computing Machines*
Covington, G. A., Gibb, G., Lockwood, J. W., McKeown, N.
IEEE COMPUTER SOC.2009: 235–238
 - **NetFPGA - An open platform for teaching how to build gigabit-rate network switches and routers** *IEEE TRANSACTIONS ON EDUCATION*
Gibb, G., Lockwood, J. W., Naous, J., Hartke, P., McKeown, N.
2008; 51 (3): 364-369
 - **NOX: Towards an operating system for networks** *COMPUTER COMMUNICATION REVIEW*
Gude, N., Koponen, T., Pettit, J., Pfaff, B., Casado, M., McKeown, N., Shenker, S.
2008; 38 (3): 105-110
 - **Designing packet buffers for router linecards** *IEEE-ACM TRANSACTIONS ON NETWORKING*
Iyer, S., Kompella, R. R., McKeown, N.
2008; 16 (3): 705-717
 - **OpenFlow: Enabling innovation in campus networks** *COMPUTER COMMUNICATION REVIEW*
McKeown, N., Anderson, T., Balakrishnan, H., Parulkar, G., Peterson, L., Rexford, J., Shenker, S., Turner, J.
2008; 38 (2): 69-74
 - **Experimental Study of Router Buffer Sizing** *8th ACM SIGCOMM Internet Measurement Conference*
Beheshti, N., Ganjali, Y., Ghobadi, M., McKeown, N., Salmon, G.
ASSOC COMPUTING MACHINERY.2008: 197–210
 - **Performing Time-Sensitive Network Experiments**
Beheshti, N., Ganjali, Y., Ghobadi, M., McKeown, N., Naous, J., Salmon, G.
2008
 - **The Effectiveness of Whitelisting: a User-Study**
Erickson, D., Casado, M., McKeown, N.
2008
 - **Implementing an OpenFlow Switch on the NetFPGA platform**
Naous, J., Erickson, D., Covington, A., Appenzeller, G., McKeown, N.
2008
 - **Designing a Fault-Tolerant Network Using Valiant Load-Balancing**
Zhang-Shen, R., McKeown, N.
2008
 - **Obtaining high throughput in networks with tiny buffers** *16th International Workshop on Quality of Service (IWQoS 2008)*
Beheshti, N., Ganjali, Y., Goel, A., McKeown, N.
IEEE.2008: 72–76
 - **Designing a fault-tolerant network using valiant load-balancing** *27th IEEE Conference on Computer Communications (INFOCOM 2008)*
Zhang-Shen, R., McKeown, N.

IEEE.2008: 301–305

- **Guaranteeing quality of service to peering traffic** *27th IEEE Conference on Computer Communications (INFOCOM 2008)*
Zhang-Shen, R., McKeown, N.
IEEE.2008: 2146–2152
- **Stability analysis of explicit congestion control protocols** *IEEE COMMUNICATIONS LETTERS*
Balakrishnan, H., Dukkipati, N., McKeown, N., Tomlin, C. J.
2007; 11 (10): 823-825
- **Prototyping fast, simple, secure switches for ethane** *15th Annual IEEE Symposium on High-Performance Interconnects*
Luo, J., Pettit, J., Casado, M., Lockwood, J., McKeown, N.
IEEE COMPUTER SOC.2007: 73–79
- **Experimenting with Buffer Sizing in Routers**
Beheshti, N., Ganjali, Y., Naous, J., McKeown, N.
2007
- **Packet Scheduling in Optical FIFO Buffers** *High-Speed Networking Workshop (In Conjunction with IEEE Infocom 2007), Anchorage, AK*
Beheshti, N., Ganjali, Y., McKeown, N.
2007: 4
- **Can Overlay hosting services make ip ossification irrelevant** *cabernet.cs.princeton.edu*
Turner, J., McKeown, N.
2007: 4
- **Building a RCP (Rate control protocol) test network** *15th Annual IEEE Symposium on High-Performance Interconnects*
Dukkipati, N., Gibb, G., McKeown, N., Zhu, J.
IEEE COMPUTER SOC.2007: 91–98
- **NetFPGA - An open platform for gigabit-rate network switching and routing** *IEEE International Conference on Microelectronic Systems Education*
Lockwood, J. W., McKeown, N., Watson, G., Gibb, G., Hartke, P., Naous, J., Raghuraman, R., Luo, H.
IEEE COMPUTER SOC.2007: 160–161
- **Update on buffer sizing in Internet routers** *COMPUTER COMMUNICATION REVIEW*
Ganjali, Y., McKeown, N.
2006; 36 (5): 67-70
- **Routers with very small buffers** *IEEE INFOCOM 2006 Conference/25th IEEE International Conference on Computer Communications*
Enachescu, M., Ganjali, Y., Goel, A., McKeown, N., Roughgarden, T.
IEEE.2006: 1833–1843
- **The Clack Graphical Router: Visualizing Network Software**
Wendlandt, D., Casado, M., Tarjan, P., McKeown, N.
2006
- **Why flow-completion time is the right metric for congestion control** *COMPUTER COMMUNICATION REVIEW*
Dukkipati, N., McKeown, N.
2006; 36 (1): 59-62
- **SANE: A protection architecture for enterprise networks** *15th USENIX Security Symposium*
Casado, M., Garfinkel, T., Akella, A., Freedman, M. J., Boneh, D., McKeown, N., Shenker, S.
USENIX ASSOC.2006: 137–151
- **Buffer sizing in all-optical packet switches** *Conference on Optical Fiber Communications/National Fiber Optic Engineers Conference*
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