

# References

**A note on URLs.** In the references below, we have provided URLs for Web pages, Web-only documents, and other material that has not been published in a conference or journal (when we have been able to locate a URL for such material). We have not provided URLs for conference and journal publications, as these documents can usually be located via a search engine, from the conference Web site (e.g., papers in all *ACM SIGCOMM* conferences and workshops can be located via <http://www.acm.org/sigcomm>), or via a digital library subscription. While all URLs provided below were valid (and tested) in Jan. 2016, URLs can become out of date. Please consult the online version of this book ([www.pearsonglobaleditions.com/kurose](http://www.pearsonglobaleditions.com/kurose)) for an up-to-date bibliography.

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[3GPP 2016] Third Generation Partnership Project homepage, <http://www.3gpp.org/>

[Abramson 1970] N. Abramson, “The Aloha System—Another Alternative for Computer Communications,” *Proc. 1970 Fall Joint Computer Conference, AFIPS Conference*, p. 37, 1970.

[Abramson 1985] N. Abramson, “Development of the Alohanet,” *IEEE Transactions on Information Theory*, Vol. IT-31, No. 3 (Mar. 1985), pp. 119–123.

[Abramson 2009] N. Abramson, “The Alohanet—Surfing for Wireless Data,” *IEEE Communications Magazine*, Vol. 47, No. 12, pp. 21–25.

[Adhikari 2011a] V. K. Adhikari, S. Jain, Y. Chen, Z. L. Zhang, “Vivisecting YouTube: An Active Measurement Study,” Technical Report, University of Minnesota, 2011.

[Adhikari 2012] V. K. Adhikari, Y. Gao, F. Hao, M. Varvello, V. Hilt, M. Steiner, Z. L. Zhang, “Unreeling Netflix: Understanding and Improving Multi-CDN Movie Delivery,” Technical Report, University of Minnesota, 2012.

[Afanasyev 2010] A. Afanasyev, N. Tilley, P. Reiher, L. Kleinrock, “Host-to-Host Congestion Control for TCP,” *IEEE Communications Surveys & Tutorials*, Vol. 12, No. 3, pp. 304–342.

- [Agarwal 2009] S. Agarwal, J. Lorch, "Matchmaking for Online Games and Other Latency-sensitive P2P Systems," *Proc. 2009 ACM SIGCOMM*.
- [Ager 2012] B. Ager, N. Chatzis, A. Feldmann, N. Sarrar, S. Uhlig, W. Willinger, "Anatomy of a Large European ISP," Sigcomm, 2012.
- [Ahn 1995] J. S. Ahn, P. B. Danzig, Z. Liu, and Y. Yan, "Experience with TCP Vegas: Emulation and Experiment," *Proc. 1995 ACM SIGCOMM* (Boston, MA, Aug. 1995), pp. 185–195.
- [Akamai 2016] Akamai homepage, <http://www.akamai.com>
- [Akella 2003] A. Akella, S. Seshan, A. Shaikh, "An Empirical Evaluation of Wide-Area Internet Bottlenecks," *Proc. 2003 ACM Internet Measurement Conference* (Miami, FL, Nov. 2003).
- [Akhshabi 2011] S. Akhshabi, A. C. Begen, C. Dovrolis, "An Experimental Evaluation of Rate-Adaptation Algorithms in Adaptive Streaming over HTTP," *Proc. 2011 ACM Multimedia Systems Conf.*
- [Akyildiz 2010] I. Akyildiz, D. Gutierrez-Estevez, E. Reyes, "The Evolution to 4G Cellular Systems, LTE Advanced," *Physical Communication*, Elsevier, 3 (2010), 217–244.
- [Albitz 1993] P. Albitz and C. Liu, *DNS and BIND*, O'Reilly & Associates, Petaluma, CA, 1993.
- [Al-Fares 2008] M. Al-Fares, A. Loukissas, A. Vahdat, "A Scalable, Commodity Data Center Network Architecture," *Proc. 2008 ACM SIGCOMM*.
- [Amazon 2014] J. Hamilton, "AWS: Innovation at Scale, YouTube video, [https://www.youtube.com/watch?v=JIQETrFC\\_SQ](https://www.youtube.com/watch?v=JIQETrFC_SQ)
- [Anderson 1995] J. B. Andersen, T. S. Rappaport, S. Yoshida, "Propagation Measurements and Models for Wireless Communications Channels," *IEEE Communications Magazine*, (Jan. 1995), pp. 42–49.
- [Alizadeh 2010] M. Alizadeh, A. Greenberg, D. Maltz, J. Padhye, P. Patel, B. Prabhakar, S. Sengupta, M. Sridharan. "Data center TCP (DCTCP)," *ACM SIGCOMM 2010 Conference*, ACM, New York, NY, USA, pp. 63–74.
- [Allman 2011] E. Allman, "The Robustness Principle Reconsidered: Seeking a Middle Ground," *Communications of the ACM*, Vol. 54, No. 8 (Aug. 2011), pp. 40–45.
- [Appenzeller 2004] G. Appenzeller, I. Keslassy, N. McKeown, "Sizing Router Buffers," *Proc. 2004 ACM SIGCOMM* (Portland, OR, Aug. 2004).
- [ASO-ICANN 2016] The Address Supporting Organization homepage, <http://www.aso.icann.org>

- [**AT&T 2013**] “AT&T Vision Alignment Challenge Technology Survey,” AT&T Domain 2.0 Vision White Paper, November 13, 2013.
- [**Atheros 2016**] Atheros Communications Inc., “Atheros AR5006 WLAN Chipset Product Bulletins,” <http://www.atheros.com/pt/AR5006Bulletins.htm>
- [**Ayanoglu 1995**] E. Ayanoglu, S. Paul, T. F. La Porta, K. K. Sabnani, R. D. Gitlin, “AIRMAIL: A Link-Layer Protocol for Wireless Networks,” *ACM ACM/Baltzer Wireless Networks Journal*, 1: 47–60, Feb. 1995.
- [**Bakre 1995**] A. Bakre, B. R. Badrinath, “I-TCP: Indirect TCP for Mobile Hosts,” *Proc. 1995 Int. Conf. on Distributed Computing Systems (ICDCS)* (May 1995), pp. 136–143.
- [**Balakrishnan 1997**] H. Balakrishnan, V. Padmanabhan, S. Seshan, R. Katz, “A Comparison of Mechanisms for Improving TCP Performance Over Wireless Links,” *IEEE/ACM Transactions on Networking* Vol. 5, No. 6 (Dec. 1997).
- [**Balakrishnan 2003**] H. Balakrishnan, F. Kaashoek, D. Karger, R. Morris, I. Stoica, “Looking Up Data in P2P Systems,” *Communications of the ACM*, Vol. 46, No. 2 (Feb. 2003), pp. 43–48.
- [**Baldauf 2007**] M. Baldauf, S. Dustdar, F. Rosenberg, “A Survey on Context-Aware Systems,” *Int. J. Ad Hoc and Ubiquitous Computing*, Vol. 2, No. 4 (2007), pp. 263–277.
- [**Baran 1964**] P. Baran, “On Distributed Communication Networks,” *IEEE Transactions on Communication Systems*, Mar. 1964. Rand Corporation Technical report with the same title (Memorandum RM-3420-PR, 1964). <http://www.rand.org/publications/RM/RM3420/>
- [**Bardwell 2004**] J. Bardwell, “You Believe You Understand What You Think I Said . . . The Truth About 802.11 Signal and Noise Metrics: A Discussion Clarifying Often-Misused 802.11 WLAN Terminologies,” [http://www.connect802.com/download/techpubs/2004/you\\_believe\\_D100201.pdf](http://www.connect802.com/download/techpubs/2004/you_believe_D100201.pdf)
- [**Barford 2009**] P. Barford, N. Duffield, A. Ron, J. Sommers, “Network Performance Anomaly Detection and Localization,” *Proc. 2009 IEEE INFOCOM* (Apr. 2009).
- [**Baronti 2007**] P. Baronti, P. Pillai, V. Chook, S. Chessa, A. Gotta, Y. Hu, “Wireless Sensor Networks: A Survey on the State of the Art and the 802.15.4 and ZigBee Standards,” *Computer Communications*, Vol. 30, No. 7 (2007), pp. 1655–1695.
- [**Baset 2006**] S. A. Baset and H. Schulzrinne, “An Analysis of the Skype Peer-to-Peer Internet Telephony Protocol,” *Proc. 2006 IEEE INFOCOM* (Barcelona, Spain, Apr. 2006).

- [**BBC 2001**] BBC news online "A Small Slice of Design," Apr. 2001, <http://news.bbc.co.uk/2/hi/science/nature/1264205.stm>
- [**Beheshti 2008**] N. Beheshti, Y. Ganjali, M. Ghobadi, N. McKeown, G. Salmon, "Experimental Study of Router Buffer Sizing," *Proc. ACM Internet Measurement Conference* (Oct. 2008, Vouliagmeni, Greece).
- [**Bender 2000**] P. Bender, P. Black, M. Grob, R. Padovani, N. Sindhushayana, A. Viterbi, "CDMA/HDR: A Bandwidth-Efficient High-Speed Wireless Data Service for Nomadic Users," *IEEE Commun. Mag.*, Vol. 38, No. 7 (July 2000), pp. 70–77.
- [**Berners-Lee 1989**] T. Berners-Lee, CERN, "Information Management: A Proposal," Mar. 1989, May 1990. <http://www.w3.org/History/1989/proposal.html>
- [**Berners-Lee 1994**] T. Berners-Lee, R. Cailliau, A. Luotonen, H. Frystyk Nielsen, A. Secret, "The World-Wide Web," *Communications of the ACM*, Vol. 37, No. 8 (Aug. 1994), pp. 76–82.
- [**Bertsekas 1991**] D. Bertsekas, R. Gallager, *Data Networks, 2nd Ed.*, Prentice Hall, Englewood Cliffs, NJ, 1991.
- [**Biersack 1992**] E. W. Biersack, "Performance Evaluation of Forward Error Correction in ATM Networks," *Proc. 1999 ACM SIGCOMM* (Baltimore, MD, Aug. 1992), pp. 248–257.
- [**BIND 2016**] Internet Software Consortium page on BIND, <http://www.isc.org/bind.html>
- [**Bisdikian 2001**] C. Bisdikian, "An Overview of the Bluetooth Wireless Technology," *IEEE Communications Magazine*, No. 12 (Dec. 2001), pp. 86–94.
- [**Bishop 2003**] M. Bishop, *Computer Security: Art and Science*, Boston: Addison Wesley, Boston MA, 2003.
- [**Black 1995**] U. Black, *ATM Volume I: Foundation for Broadband Networks*, Prentice Hall, 1995.
- [**Black 1997**] U. Black, *ATM Volume II: Signaling in Broadband Networks*, Prentice Hall, 1997.
- [**Blumenthal 2001**] M. Blumenthal, D. Clark, "Rethinking the Design of the Internet: The End-to-end Arguments vs. the Brave New World," *ACM Transactions on Internet Technology*, Vol. 1, No. 1 (Aug. 2001), pp. 70–109.
- [**Bochman 1984**] G. V. Bochmann, C. A. Sunshine, "Formal Methods in Communication Protocol Design," *IEEE Transactions on Communications*, Vol. 28, No. 4 (Apr. 1980) pp. 624–631.

- [**Bolot 1996**] J-C. Bolot, A. Vega-Garcia, "Control Mechanisms for Packet Audio in the Internet," *Proc. 1996 IEEE INFOCOM*, pp. 232–239.
- [**Bosshart 2013**] P. Bosshart, G. Gibb, H. Kim, G. Varghese, N. McKeown, M. Izzard, F. Mujica, M. Horowitz, "Forwarding Metamorphosis: Fast Programmable Match-Action Processing in Hardware for SDN," *ACM SIGCOMM Comput. Commun. Rev.* 43, 4 (Aug. 2013), 99–110.
- [**Bosshart 2014**] P. Bosshart, D. Daly, G. Gibb, M. Izzard, N. McKeown, J. Rexford, C. Schlesinger, D. Talayco, A. Vahdat, G. Varghese, D. Walker, "P4: Programming Protocol-Independent Packet Processors," *ACM SIGCOMM Comput. Commun. Rev.* 44, 3 (July 2014), pp. 87–95.
- [**Brakmo 1995**] L. Brakmo, L. Peterson, "TCP Vegas: End to End Congestion Avoidance on a Global Internet," *IEEE Journal of Selected Areas in Communications*, Vol. 13, No. 8 (Oct. 1995), pp. 1465–1480.
- [**Bryant 1988**] B. Bryant, "Designing an Authentication System: A Dialogue in Four Scenes," <http://web.mit.edu/kerberos/www/dialogue.html>
- [**Bush 1945**] V. Bush, "As We May Think," *The Atlantic Monthly*, July 1945. <http://www.theatlantic.com/unbound/flashbks/computer/bushf.htm>
- [**Byers 1998**] J. Byers, M. Luby, M. Mitzenmacher, A. Rege, "A Digital Fountain Approach to Reliable Distribution of Bulk Data," *Proc. 1998 ACM SIGCOMM* (Vancouver, Canada, Aug. 1998), pp. 56–67.
- [**Caesar 2005a**] M. Caesar, D. Caldwell, N. Feamster, J. Rexford, A. Shaikh, J. van der Merwe, "Design and implementation of a Routing Control Platform," *Proc. Networked Systems Design and Implementation* (May 2005).
- [**Caesar 2005b**] M. Caesar, J. Rexford, "BGP Routing Policies in ISP Networks," *IEEE Network Magazine*, Vol. 19, No. 6 (Nov. 2005).
- [**Caldwell 2012**] C. Caldwell, "The Prime Pages," <http://www.utm.edu/research/primes/prove>
- [**Cardwell 2000**] N. Cardwell, S. Savage, T. Anderson, "Modeling TCP Latency," *Proc. 2000 IEEE INFOCOM* (Tel-Aviv, Israel, Mar. 2000).
- [**Casado 2007**] M. Casado, M. Freedman, J. Pettit, J. Luo, N. McKeown, S. Shenker, "Ethane: Taking Control of the Enterprise," *Proc. ACM SIGCOMM '07*, New York, pp. 1–12. See also *IEEE/ACM Trans. Networking*, 17, 4 (Aug. 2007), pp. 270–283.
- [**Casado 2009**] M. Casado, M. Freedman, J. Pettit, J. Luo, N. Gude, N. McKeown, S. Shenker, "Rethinking Enterprise Network Control," *IEEE/ACM Transactions on Networking (ToN)*, Vol. 17, No. 4 (Aug. 2009), pp. 1270–1283.

- [**Casado 2014**] M. Casado, N. Foster, A. Guha, “Abstractions for Software-Defined Networks,” *Communications of the ACM*, Vol. 57 No. 10, (Oct. 2014), pp. 86–95.
- [**Cerf 1974**] V. Cerf, R. Kahn, “A Protocol for Packet Network Interconnection,” *IEEE Transactions on Communications Technology*, Vol. COM-22, No. 5, pp. 627–641.
- [**CERT 2001–09**] CERT, “Advisory 2001–09: Statistical Weaknesses in TCP/IP Initial Sequence Numbers,” <http://www.cert.org/advisories/CA-2001-09.html>
- [**CERT 2003–04**] CERT, “CERT Advisory CA-2003-04 MS-SQL Server Worm,” <http://www.cert.org/advisories/CA-2003-04.html>
- [**CERT 2016**] CERT, <http://www.cert.org>
- [**CERT Filtering 2012**] CERT, “Packet Filtering for Firewall Systems,” [http://www.cert.org/tech\\_tips/packet\\_filtering.html](http://www.cert.org/tech_tips/packet_filtering.html)
- [**Cert SYN 1996**] CERT, “Advisory CA-96.21: TCP SYN Flooding and IP Spoofing Attacks,” <http://www.cert.org/advisories/CA-1998-01.html>
- [**Chandra 2007**] T. Chandra, R. Greisemer, J. Redstone, “Paxos Made Live: an Engineering Perspective,” Proc. of 2007 ACM Symposium on Principles of Distributed Computing (PODC), pp. 398–407.
- [**Chao 2001**] H. J. Chao, C. Lam, E. Oki, *Broadband Packet Switching Technologies—A Practical Guide to ATM Switches and IP Routers*, John Wiley & Sons, 2001.
- [**Chao 2011**] C. Zhang, P. Dughel, D. Wu, K. W. Ross, “Unraveling the BitTorrent Ecosystem,” *IEEE Transactions on Parallel and Distributed Systems*, Vol. 22, No. 7 (July 2011).
- [**Chen 2000**] G. Chen, D. Kotz, “A Survey of Context-Aware Mobile Computing Research,” *Technical Report TR2000-381*, Dept. of Computer Science, Dartmouth College, Nov. 2000. <http://www.cs.dartmouth.edu/reports/TR2000-381.pdf>
- [**Chen 2006**] K.-T. Chen, C.-Y. Huang, P. Huang, C.-L. Lei, “Quantifying Skype User Satisfaction,” *Proc. 2006 ACM SIGCOMM* (Pisa, Italy, Sept. 2006).
- [**Chen 2011**] Y. Chen, S. Jain, V. K. Adhikari, Z. Zhang, “Characterizing Roles of Front-End Servers in End-to-End Performance of Dynamic Content Distribution,” *Proc. 2011 ACM Internet Measurement Conference* (Berlin, Germany, Nov. 2011).
- [**Cheswick 2000**] B. Cheswick, H. Burch, S. Branigan, “Mapping and Visualizing the Internet,” *Proc. 2000 Usenix Conference* (San Diego, CA, June 2000).

- [Chiu 1989] D. Chiu, R. Jain, "Analysis of the Increase and Decrease Algorithms for Congestion Avoidance in Computer Networks," *Computer Networks and ISDN Systems*, Vol. 17, No. 1, pp. 1–14. [http://www.cs.wustl.edu/~jain/papers/cong\\_av.htm](http://www.cs.wustl.edu/~jain/papers/cong_av.htm)
- [Christiansen 2001] M. Christiansen, K. Jeffay, D. Ott, F. D. Smith, "Tuning Red for Web Traffic," *IEEE/ACM Transactions on Networking*, Vol. 9, No. 3 (June 2001), pp. 249–264.
- [Chuang 2005] S. Chuang, S. Iyer, N. McKeown, "Practical Algorithms for Performance Guarantees in Buffered Crossbars," *Proc. 2005 IEEE INFOCOM*.
- [Cisco 802.11ac 2014] Cisco Systems, "802.11ac: The Fifth Generation of Wi-Fi," Technical White Paper, Mar. 2014.
- [Cisco 7600 2016] Cisco Systems, "Cisco 7600 Series Solution and Design Guide," [http://www.cisco.com/en/US/products/hw/routers/ps368/prod\\_technical\\_reference09186a0080092246.html](http://www.cisco.com/en/US/products/hw/routers/ps368/prod_technical_reference09186a0080092246.html)
- [Cisco 8500 2012] Cisco Systems Inc., "Catalyst 8500 Campus Switch Router Architecture," [http://www.cisco.com/univercd/cc/td/doc/product/13sw/8540/rel\\_12\\_0/w5\\_6f/softcnfg/1cfg8500.pdf](http://www.cisco.com/univercd/cc/td/doc/product/13sw/8540/rel_12_0/w5_6f/softcnfg/1cfg8500.pdf)
- [Cisco 12000 2016] Cisco Systems Inc., "Cisco XR 12000 Series and Cisco 12000 Series Routers," <http://www.cisco.com/en/US/products/ps6342/index.html>
- [Cisco 2012] Cisco 2012, Data Centers, <http://www.cisco.com/go/dce>
- [Cisco 2015] Cisco Visual Networking Index: Forecast and Methodology, 2014–2019, White Paper, 2015.
- [Cisco 6500 2016] Cisco Systems, "Cisco Catalyst 6500 Architecture White Paper," [http://www.cisco.com/c/en/us/products/collateral/switches/catalyst-6500-series-switches/prod\\_white\\_paper0900aecd80673385.html](http://www.cisco.com/c/en/us/products/collateral/switches/catalyst-6500-series-switches/prod_white_paper0900aecd80673385.html)
- [Cisco NAT 2016] Cisco Systems Inc., "How NAT Works," [http://www.cisco.com/en/US/tech/tk648/tk361/technologies\\_tech\\_note09186a0080094831.shtml](http://www.cisco.com/en/US/tech/tk648/tk361/technologies_tech_note09186a0080094831.shtml)
- [Cisco QoS 2016] Cisco Systems Inc., "Advanced QoS Services for the Intelligent Internet," [http://www.cisco.com/warp/public/cc/pd/iosw/ioft/ioqo/tech/qos\\_wp.htm](http://www.cisco.com/warp/public/cc/pd/iosw/ioft/ioqo/tech/qos_wp.htm)
- [Cisco Queue 2016] Cisco Systems Inc., "Congestion Management Overview," [http://www.cisco.com/en/US/docs/ios/12\\_2/qos/configuration/guide/qcfconmg.html](http://www.cisco.com/en/US/docs/ios/12_2/qos/configuration/guide/qcfconmg.html)
- [Cisco SYN 2016] Cisco Systems Inc., "Defining Strategies to Protect Against TCP SYN Denial of Service Attacks," [http://www.cisco.com/en/US/tech/tk828/technologies\\_tech\\_note09186a00800f67d5.shtml](http://www.cisco.com/en/US/tech/tk828/technologies_tech_note09186a00800f67d5.shtml)

- [**Cisco TCAM 2014**] Cisco Systems Inc., “CAT 6500 and 7600 Series Routers and Switches TCAM Allocation Adjustment Procedures,” <http://www.cisco.com/c/en/us/support/docs/switches/catalyst-6500-series-switches/117712-problemsolution-cat6500-00.html>
- [**Cisco VNI 2015**] Cisco Systems Inc., “Visual Networking Index,” [http://www.cisco.com/web/solutions/sp/vni/vni\\_forecast\\_highlights/index.html](http://www.cisco.com/web/solutions/sp/vni/vni_forecast_highlights/index.html)
- [**Clark 1988**] D. Clark, “The Design Philosophy of the DARPA Internet Protocols,” *Proc. 1988 ACM SIGCOMM* (Stanford, CA, Aug. 1988).
- [**Cohen 1977**] D. Cohen, “Issues in Transnet Packetized Voice Communication,” *Proc. Fifth Data Communications Symposium* (Snowbird, UT, Sept. 1977), pp. 6–13.
- [**Cookie Central 2016**] Cookie Central homepage, [http://www.cookiecentral.com/n\\_cookie\\_faq.htm](http://www.cookiecentral.com/n_cookie_faq.htm)
- [**Cormen 2001**] T. H. Cormen, *Introduction to Algorithms*, 2nd Ed., MIT Press, Cambridge, MA, 2001.
- [**Crow 1997**] B. Crow, I. Widjaja, J. Kim, P. Sakai, “IEEE 802.11 Wireless Local Area Networks,” *IEEE Communications Magazine* (Sept. 1997), pp. 116–126.
- [**Cusumano 1998**] M. A. Cusumano, D. B. Yoffie, *Competing on Internet Time: Lessons from Netscape and Its Battle with Microsoft*, Free Press, New York, NY, 1998.
- [**Czyz 2014**] J. Czyz, M. Allman, J. Zhang, S. Iekel-Johnson, E. Osterweil, M. Bailey, “Measuring IPv6 Adoption,” *Proc. ACM SIGCOMM 2014*, ACM, New York, NY, USA, pp. 87–98.
- [**Dahlman 1998**] E. Dahlman, B. Gudmundson, M. Nilsson, J. Sköld, “UMTS/IMT-2000 Based on Wideband CDMA,” *IEEE Communications Magazine* (Sept. 1998), pp. 70–80.
- [**Daigle 1991**] J. N. Daigle, *Queuing Theory for Telecommunications*, Addison-Wesley, Reading, MA, 1991.
- [**DAM 2016**] Digital Attack Map, <http://www.digitalattackmap.com>
- [**Davie 2000**] B. Davie and Y. Rekhter, *MPLS: Technology and Applications*, Morgan Kaufmann Series in Networking, 2000.
- [**Davies 2005**] G. Davies, F. Kelly, “Network Dimensioning, Service Costing, and Pricing in a Packet-Switched Environment,” *Telecommunications Policy*, Vol. 28, No. 4, pp. 391–412.



- [DEC 1990] Digital Equipment Corporation, "In Memoriam: J. C. R. Licklider 1915–1990," SRC Research Report 61, Aug. 1990. <http://www.memex.org/licklider.pdf>
- [DeClercq 2002] J. DeClercq, O. Paridaens, "Scalability Implications of Virtual Private Networks," *IEEE Communications Magazine*, Vol. 40, No. 5 (May 2002), pp. 151–157.
- [Demers 1990] A. Demers, S. Keshav, S. Shenker, "Analysis and Simulation of a Fair Queuing Algorithm," *Internetworking: Research and Experience*, Vol. 1, No. 1 (1990), pp. 3–26.
- [dhc 2016] IETF Dynamic Host Configuration working group homepage, <http://www.ietf.org/html.charters/dhc-charter.html>
- [Dhungel 2012] P. Dhungel, K. W. Ross, M. Steiner., Y. Tian, X. Hei, "Xunlei: Peer-Assisted Download Acceleration on a Massive Scale," *Passive and Active Measurement Conference (PAM) 2012*, Vienna, 2012.
- [Diffie 1976] W. Diffie, M. E. Hellman, "New Directions in Cryptography," *IEEE Transactions on Information Theory*, Vol IT-22 (1976), pp. 644–654.
- [Diggavi 2004] S. N. Diggavi, N. Al-Dhahir, A. Stamoulis, R. Calderbank, "Great Expectations: The Value of Spatial Diversity in Wireless Networks," *Proceedings of the IEEE*, Vol. 92, No. 2 (Feb. 2004).
- [Dilley 2002] J. Dilley, B. Maggs, J. Parikh, H. Prokop, R. Sitaraman, B. Weihl, "Globally Distributed Content Delivery," *IEEE Internet Computing* (Sept.–Oct. 2002).
- [Diot 2000] C. Diot, B. N. Levine, B. Lyles, H. Kassem, D. Balensiefen, "Deployment Issues for the IP Multicast Service and Architecture," *IEEE Network*, Vol. 14, No. 1 (Jan./Feb. 2000) pp. 78–88.
- [Dischinger 2007] M. Dischinger, A. Haeberlen, K. Gummadi, S. Saroiu, "Characterizing residential broadband networks," *Proc. 2007 ACM Internet Measurement Conference*, pp. 24–26.
- [Dmitropoulos 2007] X. Dmitropoulos, D. Krioukov, M. Fomenkov, B. Huffaker, Y. Hyun, K. C. Claffy, G. Riley, "AS Relationships: Inference and Validation," *ACM Computer Communication Review* (Jan. 2007).
- [DOCSIS 2011] Data-Over-Cable Service Interface Specifications, DOCSIS 3.0: MAC and Upper Layer Protocols Interface Specification, CM-SP-MULPIv3.0-I16-110623, 2011.
- [Dodge 2016] M. Dodge, "An Atlas of Cyberspaces," [http://www.cybergeography.org/atlas/isp\\_maps.html](http://www.cybergeography.org/atlas/isp_maps.html)

- [Donahoo 2001] M. Donahoo, K. Calvert, *TCP/IP Sockets in C: Practical Guide for Programmers*, Morgan Kaufman, 2001.
- [DSL 2016] DSL Forum homepage, <http://www.dslforum.org/>
- [Dhungel 2008] P. Dhungel, D. Wu, B. Schonhorst, K.W. Ross, "A Measurement Study of Attacks on BitTorrent Leechers," *7th International Workshop on Peer-to-Peer Systems (IPTPS 2008)* (Tampa Bay, FL, Feb. 2008).
- [Droms 2002] R. Droms, T. Lemon, *The DHCP Handbook* (2nd Edition), SAMS Publishing, 2002.
- [Edney 2003] J. Edney and W. A. Arbaugh, *Real 802.11 Security: Wi-Fi Protected Access and 802.11i*, Addison-Wesley Professional, 2003.
- [Edwards 2011] W. K. Edwards, R. Grinter, R. Mahajan, D. Wetherall, "Advancing the State of Home Networking," *Communications of the ACM*, Vol. 54, No. 6 (June 2011), pp. 62–71.
- [Ellis 1987] H. Ellis, "The Story of Non-Secret Encryption," <http://jya.com/ellis-doc.htm>
- [Erickson 2013] D. Erickson, "The Beacon Openflow Controller," *2nd ACM SIGCOMM Workshop on Hot Topics in Software Defined Networking (HotSDN '13)*. ACM, New York, NY, USA, pp. 13–18.
- [Ericsson 2012] Ericsson, "The Evolution of Edge," [http://www.ericsson.com/technology/whitepapers/broadband/evolution\\_of\\_EDGE.shtml](http://www.ericsson.com/technology/whitepapers/broadband/evolution_of_EDGE.shtml)
- [Facebook 2014] A. Andreyev, "Introducing Data Center Fabric, the Next-Generation Facebook Data Center Network," <https://code.facebook.com/posts/360346274145943/introducing-data-center-fabric-the-next-generation-facebook-data-center-network>
- [Faloutsos 1999] C. Faloutsos, M. Faloutsos, P. Faloutsos, "What Does the Internet Look Like? Empirical Laws of the Internet Topology," *Proc. 1999 ACM SIGCOMM* (Boston, MA, Aug. 1999).
- [Farrington 2010] N. Farrington, G. Porter, S. Radhakrishnan, H. Bazzaz, V. Subramanya, Y. Fainman, G. Papen, A. Vahdat, "Helios: A Hybrid Electrical/Optical Switch Architecture for Modular Data Centers," *Proc. 2010 ACM SIGCOMM*.
- [Feamster 2004] N. Feamster, H. Balakrishnan, J. Rexford, A. Shaikh, K. van der Merwe, "The Case for Separating Routing from Routers," *ACM SIGCOMM Workshop on Future Directions in Network Architecture*, Sept. 2004.
- [Feamster 2004] N. Feamster, J. Winick, J. Rexford, "A Model for BGP Routing for Network Engineering," *Proc. 2004 ACM SIGMETRICS* (New York, NY, June 2004).

- [Feamster 2005] N. Feamster, H. Balakrishnan, "Detecting BGP Configuration Faults with Static Analysis," *NSDI* (May 2005).
- [Feamster 2013] N. Feamster, J. Rexford, E. Zegura, "The Road to SDN," *ACM Queue*, Volume 11, Issue 12, (Dec. 2013).
- [Feldmeier 1995] D. Feldmeier, "Fast Software Implementation of Error Detection Codes," *IEEE/ACM Transactions on Networking*, Vol. 3, No. 6 (Dec. 1995), pp. 640–652.
- [Ferguson 2013] A. Ferguson, A. Guha, C. Liang, R. Fonseca, S. Krishnamurthi, "Participatory Networking: An API for Application Control of SDNs," *Proceedings ACM SIGCOMM 2013*, pp. 327–338.
- [Fielding 2000] R. Fielding, "Architectural Styles and the Design of Network-based Software Architectures," 2000. PhD Thesis, UC Irvine, 2000.
- [FIPS 1995] Federal Information Processing Standard, "Secure Hash Standard," FIPS Publication 180-1. <http://www.itl.nist.gov/fipspubs/fip180-1.htm>
- [Floyd 1999] S. Floyd, K. Fall, "Promoting the Use of End-to-End Congestion Control in the Internet," *IEEE/ACM Transactions on Networking*, Vol. 6, No. 5 (Oct. 1998), pp. 458–472.
- [Floyd 2000] S. Floyd, M. Handley, J. Padhye, J. Widmer, "Equation-Based Congestion Control for Unicast Applications," *Proc. 2000 ACM SIGCOMM* (Stockholm, Sweden, Aug. 2000).
- [Floyd 2001] S. Floyd, "A Report on Some Recent Developments in TCP Congestion Control," *IEEE Communications Magazine* (Apr. 2001).
- [Floyd 2016] S. Floyd, "References on RED (Random Early Detection) Queue Management," <http://www.icir.org/floyd/red.html>
- [Floyd Synchronization 1994] S. Floyd, V. Jacobson, "Synchronization of Periodic Routing Messages," *IEEE/ACM Transactions on Networking*, Vol. 2, No. 2 (Apr. 1997) pp. 122–136.
- [Floyd TCP 1994] S. Floyd, "TCP and Explicit Congestion Notification," *ACM SIGCOMM Computer Communications Review*, Vol. 24, No. 5 (Oct. 1994), pp. 10–23.
- [Fluhrer 2001] S. Fluhrer, I. Mantin, A. Shamir, "Weaknesses in the Key Scheduling Algorithm of RC4," *Eighth Annual Workshop on Selected Areas in Cryptography* (Toronto, Canada, Aug. 2002).
- [Fortz 2000] B. Fortz, M. Thorup, "Internet Traffic Engineering by Optimizing OSPF Weights," *Proc. 2000 IEEE INFOCOM* (Tel Aviv, Israel, Apr. 2000).

- [Fortz 2002] B. Fortz, J. Rexford, M. Thorup, "Traffic Engineering with Traditional IP Routing Protocols," *IEEE Communication Magazine* (Oct. 2002).
- [Fraleigh 2003] C. Fraleigh, F. Tobagi, C. Diot, "Provisioning IP Backbone Networks to Support Latency Sensitive Traffic," *Proc. 2003 IEEE INFOCOM* (San Francisco, CA, Mar. 2003).
- [Frost 1994] J. Frost, "BSD Sockets: A Quick and Dirty Primer," <http://world.std.com/~jimf/papers/sockets/sockets.html>
- [FTC 2015] Internet of Things: Privacy and Security in a Connected World, Federal Trade Commission, 2015, <https://www.ftc.gov/system/files/documents/reports/federal-trade-commission-staff-report-november-2013-workshop-entitled-internet-things-privacy/150127iotrpt.pdf>
- [FTTH 2016] Fiber to the Home Council, <http://www.ftthcouncil.org/>
- [Gao 2001] L. Gao, J. Rexford, "Stable Internet Routing Without Global Coordination," *IEEE/ACM Transactions on Networking*, Vol. 9, No. 6 (Dec. 2001), pp. 681–692.
- [Gartner 2014] Gartner report on Internet of Things, <http://www.gartner.com/technology/research/internet-of-things>
- [Gauthier 1999] L. Gauthier, C. Diot, and J. Kurose, "End-to-End Transmission Control Mechanisms for Multiparty Interactive Applications on the Internet," *Proc. 1999 IEEE INFOCOM* (New York, NY, Apr. 1999).
- [Gember-Jacobson 2014] A. Gember-Jacobson, R. Viswanathan, C. Prakash, R. Grandl, J. Khalid, S. Das, A. Akella, "OpenNF: Enabling Innovation in Network Function Control," *Proc. ACM SIGCOMM 2014*, pp. 163–174.
- [Goodman 1997] David J. Goodman, *Wireless Personal Communications Systems*, Prentice-Hall, 1997.
- [Google IPv6 2015] Google Inc. "IPv6 Statistics," <https://www.google.com/intl/en/ipv6/statistics.html>
- [Google Locations 2016] Google data centers. <http://www.google.com/corporate/datacenter/locations.html>
- [Goralski 1999] W. Goralski, *Frame Relay for High-Speed Networks*, John Wiley, New York, 1999.
- [Greenberg 2009a] A. Greenberg, J. Hamilton, D. Maltz, P. Patel, "The Cost of a Cloud: Research Problems in Data Center Networks," *ACM Computer Communications Review* (Jan. 2009).

- [Greenberg 2009b] A. Greenberg, N. Jain, S. Kandula, C. Kim, P. Lahiri, D. Maltz, P. Patel, S. Sengupta, "VL2: A Scalable and Flexible Data Center Network," *Proc. 2009 ACM SIGCOMM*.
- [Greenberg 2011] A. Greenberg, J. Hamilton, N. Jain, S. Kandula, C. Kim, P. Lahiri, D. Maltz, P. Patel, S. Sengupta, "VL2: A Scalable and Flexible Data Center Network," *Communications of the ACM*, Vol. 54, No. 3 (Mar. 2011), pp. 95–104.
- [Greenberg 2015] A. Greenberg, "SDN for the Cloud," Sigcomm 2015 Keynote Address, <http://conferences.sigcomm.org/sigcomm/2015/pdf/papers/keynote.pdf>
- [Griffin 2012] T. Griffin, "Interdomain Routing Links," <http://www.cl.cam.ac.uk/~tgg22/interdomain/>
- [Gude 2008] N. Gude, T. Koponen, J. Pettit, B. Pfaff, M. Casado, N. McKeown, and S. Shenker, "NOX: Towards an Operating System for Networks," *ACM SIGCOMM Computer Communication Review*, July 2008.
- [Guha 2006] S. Guha, N. Daswani, R. Jain, "An Experimental Study of the Skype Peer-to-Peer VoIP System," *Proc. Fifth Int. Workshop on P2P Systems* (Santa Barbara, CA, 2006).
- [Guo 2005] L. Guo, S. Chen, Z. Xiao, E. Tan, X. Ding, X. Zhang, "Measurement, Analysis, and Modeling of BitTorrent-Like Systems," *Proc. 2005 ACM Internet Measurement Conference*.
- [Guo 2009] C. Guo, G. Lu, D. Li, H. Wu, X. Zhang, Y. Shi, C. Tian, Y. Zhang, S. Lu, "BCube: A High Performance, Server-centric Network Architecture for Modular Data Centers," *Proc. 2009 ACM SIGCOMM*.
- [Gupta 2001] P. Gupta, N. McKeown, "Algorithms for Packet Classification," *IEEE Network Magazine*, Vol. 15, No. 2 (Mar./Apr. 2001), pp. 24–32.
- [Gupta 2014] A. Gupta, L. Vanbever, M. Shahbaz, S. Donovan, B. Schlinker, N. Feamster, J. Rexford, S. Shenker, R. Clark, E. Katz-Bassett, "SDX: A Software Defined Internet Exchange," *Proc. ACM SIGCOMM 2014* (Aug. 2014), pp. 551–562.
- [Ha 2008] S. Ha, I. Rhee, L. Xu, "CUBIC: A New TCP-Friendly High-Speed TCP Variant," *ACM SIGOPS Operating System Review*, 2008.
- [Halabi 2000] S. Halabi, *Internet Routing Architectures*, 2nd Ed., Cisco Press, 2000.
- [Hanabali 2005] A. A. Hanbali, E. Altman, P. Nain, "A Survey of TCP over Ad Hoc Networks," *IEEE Commun. Surveys and Tutorials*, Vol. 7, No. 3 (2005), pp. 22–36.

- [Hei 2007] X. Hei, C. Liang, J. Liang, Y. Liu, K. W. Ross, "A Measurement Study of a Large-scale P2P IPTV System," *IEEE Trans. on Multimedia* (Dec. 2007).
- [Heidemann 1997] J. Heidemann, K. Obraczka, J. Touch, "Modeling the Performance of HTTP over Several Transport Protocols," *IEEE/ACM Transactions on Networking*, Vol. 5, No. 5 (Oct. 1997), pp. 616–630.
- [Held 2001] G. Held, *Data Over Wireless Networks: Bluetooth, WAP, and Wireless LANs*, McGraw-Hill, 2001.
- [Holland 2001] G. Holland, N. Vaidya, V. Bahl, "A Rate-Adaptive MAC Protocol for Multi-Hop Wireless Networks," *Proc. 2001 ACM Int. Conference of Mobile Computing and Networking (Mobicom01)* (Rome, Italy, July 2001).
- [Hollot 2002] C.V. Hollot, V. Misra, D. Towsley, W. Gong, "Analysis and Design of Controllers for AQM Routers Supporting TCP Flows," *IEEE Transactions on Automatic Control*, Vol. 47, No. 6 (June 2002), pp. 945–959.
- [Hong 2013] C. Hong, S. Kandula, R. Mahajan, M. Zhang, V. Gill, M. Nanduri, R. Wattenhofer, "Achieving High Utilization with Software-driven WAN," *ACM SIGCOMM Conference* (Aug. 2013), pp. 15–26.
- [Huang 2002] C. Haung, V. Sharma, K. Owens, V. Makam, "Building Reliable MPLS Networks Using a Path Protection Mechanism," *IEEE Communications Magazine*, Vol. 40, No. 3 (Mar. 2002), pp. 156–162.
- [Huang 2005] Y. Huang, R. Guerin, "Does Over-Provisioning Become More or Less Efficient as Networks Grow Larger?," *Proc. IEEE Int. Conf. Network Protocols (ICNP)* (Boston MA, Nov. 2005).
- [Huang 2008] C. Huang, J. Li, A. Wang, K. W. Ross, "Understanding Hybrid CDN-P2P: Why Limelight Needs Its Own Red Swoosh," *Proc. 2008 NOSSDAV*, Braunschweig, Germany.
- [Huitema 1998] C. Huitema, *IPv6: The New Internet Protocol*, 2nd Ed., Prentice Hall, Englewood Cliffs, NJ, 1998.
- [Huston 1999a] G. Huston, "Interconnection, Peering, and Settlements—Part I," *The Internet Protocol Journal*, Vol. 2, No. 1 (Mar. 1999).
- [Huston 2004] G. Huston, "NAT Anatomy: A Look Inside Network Address Translators," *The Internet Protocol Journal*, Vol. 7, No. 3 (Sept. 2004).
- [Huston 2008a] G. Huston, "Confronting IPv4 Address Exhaustion," <http://www.potaroo.net/ispcol/2008-10/v4depletion.html>
- [Huston 2008b] G. Huston, G. Michaelson, "IPv6 Deployment: Just where are we?" <http://www.potaroo.net/ispcol/2008-04/ipv6.html>

[Huston 2011a] G. Huston, "A Rough Guide to Address Exhaustion," *The Internet Protocol Journal*, Vol. 14, No. 1 (Mar. 2011).

[Huston 2011b] G. Huston, "Transitioning Protocols," *The Internet Protocol Journal*, Vol. 14, No. 1 (Mar. 2011).

[IAB 2016] Internet Architecture Board homepage, <http://www.iab.org/>

[IANA Protocol Numbers 2016] Internet Assigned Numbers Authority, Protocol Numbers, <http://www.iana.org/assignments/protocol-numbers/protocol-numbers.xhtml>

[IBM 1997] IBM Corp., *IBM Inside APPN - The Essential Guide to the Next-Generation SNA*, SG24-3669-03, June 1997.

[ICANN 2016] The Internet Corporation for Assigned Names and Numbers homepage, <http://www.icann.org>

[IEEE 802 2016] IEEE 802 LAN/MAN Standards Committee homepage, <http://www.ieee802.org/>

[IEEE 802.11 1999] IEEE 802.11, "1999 Edition (ISO/IEC 8802-11: 1999) IEEE Standards for Information Technology—Telecommunications and Information Exchange Between Systems—Local and Metropolitan Area Network—Specific Requirements—Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specification," <http://standards.ieee.org/getieee802/download/802.11-1999.pdf>

[IEEE 802.11ac 2013] IEEE, "802.11ac-2013—IEEE Standard for Information technology—Telecommunications and Information Exchange Between Systems—Local and Metropolitan Area Networks—Specific Requirements—Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications—Amendment 4: Enhancements for Very High Throughput for Operation in Bands Below 6 GHz."

[IEEE 802.11n 2012] IEEE, "IEEE P802.11—Task Group N—Meeting Update: Status of 802.11n," [http://grouper.ieee.org/groups/802/11/Reports/tgn\\_update.htm](http://grouper.ieee.org/groups/802/11/Reports/tgn_update.htm)

[IEEE 802.15 2012] IEEE 802.15 Working Group for WPAN homepage, <http://grouper.ieee.org/groups/802/15/>

[IEEE 802.15.4 2012] IEEE 802.15 WPAN Task Group 4, <http://www.ieee802.org/15/pub/TG4.html>

[IEEE 802.16d 2004] IEEE, "IEEE Standard for Local and Metropolitan Area Networks, Part 16: Air Interface for Fixed Broadband Wireless Access Systems," <http://standards.ieee.org/getieee802/download/802.16-2004.pdf>

[**IEEE 802.16e 2005**] IEEE, “IEEE Standard for Local and Metropolitan Area Networks, Part 16: Air Interface for Fixed and Mobile Broadband Wireless Access Systems, Amendment 2: Physical and Medium Access Control Layers for Combined Fixed and Mobile Operation in Licensed Bands and Corrigendum 1,” <http://standards.ieee.org/getieee802/download/802.16e-2005.pdf>

[**IEEE 802.1q 2005**] IEEE, “IEEE Standard for Local and Metropolitan Area Networks: Virtual Bridged Local Area Networks,” <http://standards.ieee.org/getieee802/download/802.1Q-2005.pdf>

[**IEEE 802.1X**] IEEE Std 802.1X-2001 Port-Based Network Access Control, [http://standards.ieee.org/reading/ieee/std\\_public/description/lanman/802.1x-2001\\_desc.html](http://standards.ieee.org/reading/ieee/std_public/description/lanman/802.1x-2001_desc.html)

[**IEEE 802.3 2012**] IEEE, “IEEE 802.3 CSMA/CD (Ethernet),” <http://grouper.ieee.org/groups/802/3/>

[**IEEE 802.5 2012**] IEEE, IEEE 802.5 homepage, <http://www.ieee802.org/5/www8025org/>

[**IETF 2016**] Internet Engineering Task Force homepage, <http://www.ietf.org>

[**Ihm 2011**] S. Ihm, V. S. Pai, “Towards Understanding Modern Web Traffic,” *Proc. 2011 ACM Internet Measurement Conference* (Berlin).

[**IMAP 2012**] The IMAP Connection, <http://www.imap.org/>

[**Intel 2016**] Intel Corp., “Intel 710 Ethernet Adapter,” <http://www.intel.com/content/www/us/en/ethernet-products/converged-network-adapters/ethernet-xl710.html>

[**Internet2 Multicast 2012**] Internet2 Multicast Working Group homepage, <http://www.internet2.edu/multicast/>

[**ISC 2016**] Internet Systems Consortium homepage, <http://www.isc.org>

[**ISI 1979**] Information Sciences Institute, “DoD Standard Internet Protocol,” Internet Engineering Note 123 (Dec. 1979), <http://www.isi.edu/in-notes/ien/ien123.txt>

[**ISO 2016**] International Organization for Standardization homepage, International Organization for Standardization, <http://www.iso.org/>

[**ISO X.680 2002**] International Organization for Standardization, “X.680: ITU-T Recommendation X.680 (2002) Information Technology—Abstract Syntax Notation One (ASN.1): Specification of Basic Notation,” <http://www.itu.int/ITU-T/studygroups/com17/languages/X.680-0207.pdf>



- [ITU 1999] Asymmetric Digital Subscriber Line (ADSL) Transceivers. ITU-T G.992.1, 1999.
- [ITU 2003] Asymmetric Digital Subscriber Line (ADSL) Transceivers—Extended Bandwidth ADSL2 (ADSL2Plus). ITU-T G.992.5, 2003.
- [ITU 2005a] International Telecommunication Union, “ITU-T X.509, The Directory: Public-key and attribute certificate frameworks” (Aug. 2005).
- [ITU 2006] ITU, “G.993.1: Very High Speed Digital Subscriber Line Transceivers (VDSL),” <https://www.itu.int/rec/T-REC-G.993.1-200406-I/en>, 2006.
- [ITU 2015] “Measuring the Information Society Report,” 2015, <http://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2015.aspx>
- [ITU 2012] The ITU homepage, <http://www.itu.int/>
- [ITU-T Q.2931 1995] International Telecommunication Union, “Recommendation Q.2931 (02/95)—Broadband Integrated Services Digital Network (B-ISDN)—Digital Subscriber Signalling System No. 2 (DSS 2)—User-Network Interface (UNI)—Layer 3 Specification for Basic Call/Connection Control.”
- [IXP List 2016] List of IXPs, Wikipedia, [https://en.wikipedia.org/wiki/List\\_of\\_Internet\\_exchange\\_points](https://en.wikipedia.org/wiki/List_of_Internet_exchange_points)
- [Iyengar 2015] J. Iyengar, I. Swett, “QUIC: A UDP-Based Secure and Reliable Transport for HTTP/2,” Internet Draft draft-tsvwg-quic-protocol-00, June 2015.
- [Iyer 2008] S. Iyer, R. R. Kompella, N. McKeown, “Designing Packet Buffers for Router Line Cards,” *IEEE Transactions on Networking*, Vol. 16, No. 3 (June 2008), pp. 705–717.
- [Jacobson 1988] V. Jacobson, “Congestion Avoidance and Control,” *Proc. 1988 ACM SIGCOMM* (Stanford, CA, Aug. 1988), pp. 314–329.
- [Jain 1986] R. Jain, “A Timeout-Based Congestion Control Scheme for Window Flow-Controlled Networks,” *IEEE Journal on Selected Areas in Communications SAC-4*, 7 (Oct. 1986).
- [Jain 1989] R. Jain, “A Delay-Based Approach for Congestion Avoidance in Interconnected Heterogeneous Computer Networks,” *ACM SIGCOMM Computer Communications Review*, Vol. 19, No. 5 (1989), pp. 56–71.
- [Jain 1994] R. Jain, *FDDI Handbook: High-Speed Networking Using Fiber and Other Media*, Addison-Wesley, Reading, MA, 1994.
- [Jain 1996] R. Jain, S. Kalyanaraman, S. Fahmy, R. Goyal, S. Kim, “Tutorial Paper on ABR Source Behavior,” *ATM Forum/96-1270*, Oct. 1996. <http://www.cse.wustl.edu/~jain/atmf/ftp/atm96-1270.pdf>

- [**Jain 2013**] S. Jain, A. Kumar, S. Mandal, J. Ong, L. Poutievski, A. Singh, S. Venkata, J. Wanderer, J. Zhou, M. Zhu, J. Zolla, U. Hölzle, S. Stuart, A. Vahdat, "B4: Experience with a Globally Deployed Software Defined Wan," *ACM SIGCOMM 2013*, pp. 3–14.
- [**Jaiswal 2003**] S. Jaiswal, G. Iannaccone, C. Diot, J. Kurose, D. Towsley, "Measurement and Classification of Out-of-Sequence Packets in a Tier-1 IP backbone," *Proc. 2003 IEEE INFOCOM*.
- [**Ji 2003**] P. Ji, Z. Ge, J. Kurose, D. Towsley, "A Comparison of Hard-State and Soft-State Signaling Protocols," *Proc. 2003 ACM SIGCOMM* (Karlsruhe, Germany, Aug. 2003).
- [**Jimenez 1997**] D. Jimenez, "Outside Hackers Infiltrate MIT Network, Compromise Security," *The Tech*, Vol. 117, No 49 (Oct. 1997), p. 1, <http://www-tech.mit.edu/V117/N49/hackers.49n.html>
- [**Jin 2004**] C. Jin, D. X. We, S. Low, "FAST TCP: Motivation, Architecture, Algorithms, Performance," *Proc. 2004 IEEE INFOCOM* (Hong Kong, Mar. 2004).
- [**Juniper Contrail 2016**] Juniper Networks, "Contrail," <http://www.juniper.net/us/en/products-services/sdn/contrail/>
- [**Juniper MX2020 2015**] Juniper Networks, "MX2020 and MX2010 3D Universal Edge Routers," [www.juniper.net/us/en/local/pdf/.../1000417-en.pdf](http://www.juniper.net/us/en/local/pdf/.../1000417-en.pdf)
- [**Kaaranen 2001**] H. Kaaranen, S. Naghian, L. Laitinen, A. Ahtiainen, V. Niemi, *Networks: Architecture, Mobility and Services*, New York: John Wiley & Sons, 2001.
- [**Kahn 1967**] D. Kahn, *The Codebreakers: The Story of Secret Writing*, The Macmillan Company, 1967.
- [**Kahn 1978**] R. E. Kahn, S. Gronemeyer, J. Burchfiel, R. Kunzelman, "Advances in Packet Radio Technology," *Proc. 1978 IEEE INFOCOM*, 66, 11 (Nov. 1978).
- [**Kamerman 1997**] A. Kamerman, L. Monteban, "WaveLAN-II: A High-Performance Wireless LAN for the Unlicensed Band," *Bell Labs Technical Journal* (Summer 1997), pp. 118–133.
- [**Kar 2000**] K. Kar, M. Kodialam, T. V. Lakshman, "Minimum Interference Routing of Bandwidth Guaranteed Tunnels with MPLS Traffic Engineering Applications," *IEEE J. Selected Areas in Communications* (Dec. 2000).
- [**Karn 1987**] P. Karn, C. Partridge, "Improving Round-Trip Time Estimates in Reliable Transport Protocols," *Proc. 1987 ACM SIGCOMM*.

[Karol 1987] M. Karol, M. Hluchyj, A. Morgan, "Input Versus Output Queuing on a Space-Division Packet Switch," *IEEE Transactions on Communications*, Vol. 35, No. 12 (Dec. 1987), pp. 1347–1356.

[Kaufman 1995] C. Kaufman, R. Perlman, M. Speciner, *Network Security, Private Communication in a Public World*, Prentice Hall, Englewood Cliffs, NJ, 1995.

[Kelly 1998] F. P. Kelly, A. Maulloo, D. Tan, "Rate Control for Communication Networks: Shadow Prices, Proportional Fairness and Stability," *J. Operations Res. Soc.*, Vol. 49, No. 3 (Mar. 1998), pp. 237–252.

[Kelly 2003] T. Kelly, "Scalable TCP: Improving Performance in High Speed Wide Area Networks," *ACM SIGCOMM Computer Communications Review*, Volume 33, No. 2 (Apr. 2003), pp 83–91.

[Kilkki 1999] K. Kilkki, *Differentiated Services for the Internet*, Macmillan Technical Publishing, Indianapolis, IN, 1999.

[Kim 2005] H. Kim, S. Rixner, V. Pai, "Network Interface Data Caching," *IEEE Transactions on Computers*, Vol. 54, No. 11 (Nov. 2005), pp. 1394–1408.

[Kim 2008] C. Kim, M. Caesar, J. Rexford, "Floodless in SEATTLE: A Scalable Ethernet Architecture for Large Enterprises," *Proc. 2008 ACM SIGCOMM* (Seattle, WA, Aug. 2008).

[Kleinrock 1961] L. Kleinrock, "Information Flow in Large Communication Networks," RLE Quarterly Progress Report, July 1961.

[Kleinrock 1964] L. Kleinrock, *1964 Communication Nets: Stochastic Message Flow and Delay*, McGraw-Hill, New York, NY, 1964.

[Kleinrock 1975] L. Kleinrock, *Queuing Systems, Vol. 1*, John Wiley, New York, 1975.

[Kleinrock 1975b] L. Kleinrock, F. A. Tobagi, "Packet Switching in Radio Channels: Part I—Carrier Sense Multiple-Access Modes and Their Throughput-Delay Characteristics," *IEEE Transactions on Communications*, Vol. 23, No. 12 (Dec. 1975), pp. 1400–1416.

[Kleinrock 1976] L. Kleinrock, *Queuing Systems, Vol. 2*, John Wiley, New York, 1976.

[Kleinrock 2004] L. Kleinrock, "The Birth of the Internet," <http://www.lk.cs.ucla.edu/LK/Inet/birth.html>

[Kohler 2006] E. Kohler, M. Handley, S. Floyd, "DDCP: Designing DCCP: Congestion Control Without Reliability," *Proc. 2006 ACM SIGCOMM* (Pisa, Italy, Sept. 2006).

- [**Kolding 2003**] T. Kolding, K. Pedersen, J. Wigard, F. Frederiksen, P. Mogensen, "High Speed Downlink Packet Access: WCDMA Evolution," *IEEE Vehicular Technology Society News* (Feb. 2003), pp. 4–10.
- [**Koponen 2010**] T. Koponen, M. Casado, N. Gude, J. Stribling, L. Poutievski, M. Zhu, R. Ramanathan, Y. Iwata, H. Inoue, T. Hama, S. Shenker, "Onix: A Distributed Control Platform for Large-Scale Production Networks," *9th USENIX conference on Operating systems design and implementation (OSDI'10)*, pp. 1–6.
- [**Koponen 2011**] T. Koponen, S. Shenker, H. Balakrishnan, N. Feamster, I. Ganichev, A. Ghodsi, P. B. Godfrey, N. McKeown, G. Parulkar, B. Raghavan, J. Rexford, S. Arianfar, D. Kuptsov, "Architecting for Innovation," *ACM Computer Communications Review*, 2011.
- [**Korhonen 2003**] J. Korhonen, *Introduction to 3G Mobile Communications*, 2nd ed., Artech House, 2003.
- [**Koziol 2003**] J. Koziol, *Intrusion Detection with Snort*, Sams Publishing, 2003.
- [**Kreutz 2015**] D. Kreutz, F.M.V. Ramos, P. Esteves Verissimo, C. Rothenberg, S. Azodolmolky, S. Uhlig, "Software-Defined Networking: A Comprehensive Survey," *Proceedings of the IEEE*, Vol. 103, No. 1 (Jan. 2015), pp. 14–76. This paper is also being updated at <https://github.com/SDN-Survey/latex/wiki>
- [**Krishnamurthy 2001**] B. Krishnamurthy, J. Rexford, *Web Protocols and Practice: HTTP/ 1.1, Networking Protocols, and Traffic Measurement*, Addison-Wesley, Boston, MA, 2001.
- [**Kulkarni 2005**] S. Kulkarni, C. Rosenberg, "Opportunistic Scheduling: Generalizations to Include Multiple Constraints, Multiple Interfaces, and Short Term Fairness," *Wireless Networks*, 11 (2005), 557–569.
- [**Kumar 2006**] R. Kumar, K.W. Ross, "Optimal Peer-Assisted File Distribution: Single and Multi-Class Problems," *IEEE Workshop on Hot Topics in Web Systems and Technologies* (Boston, MA, 2006).
- [**Labovitz 1997**] C. Labovitz, G. R. Malan, F. Jahanian, "Internet Routing Instability," *Proc. 1997 ACM SIGCOMM* (Cannes, France, Sept. 1997), pp. 115–126.
- [**Labovitz 2010**] C. Labovitz, S. Iekel-Johnson, D. McPherson, J. Oberheide, F. Jahanian, "Internet Inter-Domain Traffic," *Proc. 2010 ACM SIGCOMM*.
- [**Labrador 1999**] M. Labrador, S. Banerjee, "Packet Dropping Policies for ATM and IP Networks," *IEEE Communications Surveys*, Vol. 2, No. 3 (Third Quarter 1999), pp. 2–14.
- [**Lacage 2004**] M. Lacage, M.H. Manshaei, T. Turetletti, "IEEE 802.11 Rate Adaptation: A Practical Approach," *ACM Int. Symposium on Modeling, Analysis, and Simulation of Wireless and Mobile Systems (MSWiM)* (Venice, Italy, Oct. 2004).

- [Lakhina 2004] A. Lakhina, M. Crovella, C. Diot, "Diagnosing Network-Wide Traffic Anomalies," *Proc. 2004 ACM SIGCOMM*.
- [Lakhina 2005] A. Lakhina, M. Crovella, C. Diot, "Mining Anomalies Using Traffic Feature Distributions," *Proc. 2005 ACM SIGCOMM*.
- [Lakshman 1997] T. V. Lakshman, U. Madhow, "The Performance of TCP/IP for Networks with High Bandwidth-Delay Products and Random Loss," *IEEE/ACM Transactions on Networking*, Vol. 5, No. 3 (1997), pp. 336–350.
- [Lakshman 2004] T. V. Lakshman, T. Nandagopal, R. Ramjee, K. Sabnani, T. Woo, "The SoftRouter Architecture," *Proc. 3rd ACM Workshop on Hot Topics in Networks (Hotnets-III)*, Nov. 2004.
- [Lam 1980] S. Lam, "A Carrier Sense Multiple Access Protocol for Local Networks," *Computer Networks*, Vol. 4 (1980), pp. 21–32.
- [Lampport 1989] L. Lamport, "The Part-Time Parliament," Technical Report 49, Systems Research Center, Digital Equipment Corp., Palo Alto, Sept. 1989.
- [Lampson 1983] Lampson, Butler W. "Hints for computer system design," *ACM SIGOPS Operating Systems Review*, Vol. 17, No. 5, 1983.
- [Lampson 1996] B. Lampson, "How to Build a Highly Available System Using Consensus," *Proc. 10th International Workshop on Distributed Algorithms (WDAG '96)*, Özalp Babaoglu and Keith Marzullo (Eds.), Springer-Verlag, pp. 1–17.
- [Lawton 2001] G. Lawton, "Is IPv6 Finally Gaining Ground?" *IEEE Computer Magazine* (Aug. 2001), pp. 11–15.
- [LeBlond 2011] S. Le Blond, C. Zhang, A. Legout, K. Ross, W. Dabbous. 2011, "I know where you are and what you are sharing: exploiting P2P communications to invade users' privacy." *2011 ACM Internet Measurement Conference*, ACM, New York, NY, USA, pp. 45–60.
- [Leighton 2009] T. Leighton, "Improving Performance on the Internet," *Communications of the ACM*, Vol. 52, No. 2 (Feb. 2009), pp. 44–51.
- [Leiner 1998] B. Leiner, V. Cerf, D. Clark, R. Kahn, L. Kleinrock, D. Lynch, J. Postel, L. Roberts, S. Woolf, "A Brief History of the Internet," <http://www.isoc.org/internet/history/brief.html>
- [Leung 2006] K. Leung, V. O.K. Li, "TCP in Wireless Networks: Issues, Approaches, and Challenges," *IEEE Commun. Surveys and Tutorials*, Vol. 8, No. 4 (2006), pp. 64–79.
- [Levin 2012] D. Levin, A. Wundsam, B. Heller, N. Handigol, A. Feldmann, "Logically Centralized?: State Distribution Trade-offs in Software Defined Networks," *Proc. First Workshop on Hot Topics in Software Defined Networks* (Aug. 2012), pp. 1–6.

- [Li 2004] L. Li, D. Alderson, W. Willinger, J. Doyle, "A First-Principles Approach to Understanding the Internet's Router-Level Topology," *Proc. 2004 ACM SIGCOMM* (Portland, OR, Aug. 2004).
- [Li 2007] J. Li, M. Guidero, Z. Wu, E. Purpus, T. Ehrenkranz, "BGP Routing Dynamics Revisited." *ACM Computer Communication Review* (Apr. 2007).
- [Li 2015] S.Q. Li, "Building Softcom Ecosystem Foundation," Open Networking Summit, 2015.
- [Lin 2001] Y. Lin, I. Chlamtac, *Wireless and Mobile Network Architectures*, John Wiley and Sons, New York, NY, 2001.
- [Liogkas 2006] N. Liogkas, R. Nelson, E. Kohler, L. Zhang, "Exploiting BitTorrent for Fun (but Not Profit)," *6th International Workshop on Peer-to-Peer Systems (IPTPS 2006)*.
- [Liu 2003] J. Liu, I. Matta, M. Crovella, "End-to-End Inference of Loss Nature in a Hybrid Wired/Wireless Environment," *Proc. WiOpt'03: Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks*.
- [Locher 2006] T. Locher, P. Moor, S. Schmid, R. Wattenhofer, "Free Riding in BitTorrent is Cheap," *Proc. ACM HotNets 2006* (Irvine CA, Nov. 2006).
- [Lui 2004] J. Lui, V. Misra, D. Rubenstein, "On the Robustness of Soft State Protocols," *Proc. IEEE Int. Conference on Network Protocols (ICNP '04)*, pp. 50–60.
- [Mahdavi 1997] J. Mahdavi, S. Floyd, "TCP-Friendly Unicast Rate-Based Flow Control," unpublished note (Jan. 1997).
- [MaxMind 2016] <http://www.maxmind.com/app/ip-location>
- [Maymounkov 2002] P. Maymounkov, D. Mazières. "Kademlia: A Peer-to-Peer Information System Based on the XOR Metric." *Proceedings of the 1st International Workshop on Peerto-Peer Systems (IPTPS '02)* (Mar. 2002), pp. 53–65.
- [McKeown 1997a] N. McKeown, M. Izzard, A. Mekkittikul, W. Ellersick, M. Horowitz, "The Tiny Tera: A Packet Switch Core," *IEEE Micro Magazine* (Jan.–Feb. 1997).
- [McKeown 1997b] N. McKeown, "A Fast Switched Backplane for a Gigabit Switched Router," *Business Communications Review*, Vol. 27, No. 12. [http://tiny-tera.stanford.edu/~nickm/papers/cisco\\_fasts\\_wp.pdf](http://tiny-tera.stanford.edu/~nickm/papers/cisco_fasts_wp.pdf)
- [McKeown 2008] N. McKeown, T. Anderson, H. Balakrishnan, G. Parulkar, L. Peterson, J. Rexford, S. Shenker, J. Turner. 2008. OpenFlow: Enabling Innovation in Campus Networks. *SIGCOMM Comput. Commun. Rev.* 38, 2 (Mar. 2008), pp. 69–74.

- [**McQuillan 1980**] J. McQuillan, I. Richer, E. Rosen, "The New Routing Algorithm for the Arpanet," *IEEE Transactions on Communications*, Vol. 28, No. 5 (May 1980), pp. 711–719.
- [**Metcalfe 1976**] R. M. Metcalfe, D. R. Boggs. "Ethernet: Distributed Packet Switching for Local Computer Networks," *Communications of the Association for Computing Machinery*, Vol. 19, No. 7 (July 1976), pp. 395–404.
- [**Meyers 2004**] A. Myers, T. Ng, H. Zhang, "Rethinking the Service Model: Scaling Ethernet to a Million Nodes," *ACM Hotnets Conference*, 2004.
- [**MFA Forum 2016**] IP/MPLS Forum homepage, <http://www.ipmplsforum.org/>
- [**Mockapetris 1988**] P. V. Mockapetris, K. J. Dunlap, "Development of the Domain Name System," *Proc. 1988 ACM SIGCOMM* (Stanford, CA, Aug. 1988).
- [**Mockapetris 2005**] P. Mockapetris, Sigcomm Award Lecture, video available at <http://www.postel.org/sigcomm>
- [**Molinero-Fernandez 2002**] P. Molinaro-Fernandez, N. McKeown, H. Zhang, "Is IP Going to Take Over the World (of Communications)?" *Proc. 2002 ACM Hotnets*.
- [**Molle 1987**] M. L. Molle, K. Sohraby, A. N. Venetsanopoulos, "Space-Time Models of Asynchronous CSMA Protocols for Local Area Networks," *IEEE Journal on Selected Areas in Communications*, Vol. 5, No. 6 (1987), pp. 956–968.
- [**Moore 2001**] D. Moore, G. Voelker, S. Savage, "Inferring Internet Denial of Service Activity," *Proc. 2001 USENIX Security Symposium* (Washington, DC, Aug. 2001).
- [**Motorola 2007**] Motorola, "Long Term Evolution (LTE): A Technical Overview," [http://www.motorola.com/staticfiles/Business/Solutions/Industry%20Solutions/Service%20Providers/Wireless%20Operators/LTE/\\_Document/Static%20Files/6834\\_MotDoc\\_New.pdf](http://www.motorola.com/staticfiles/Business/Solutions/Industry%20Solutions/Service%20Providers/Wireless%20Operators/LTE/_Document/Static%20Files/6834_MotDoc_New.pdf)
- [**Mouly 1992**] M. Mouly, M. Pautet, *The GSM System for Mobile Communications*, Cell and Sys, Palaiseau, France, 1992.
- [**Moy 1998**] J. Moy, *OSPF: Anatomy of An Internet Routing Protocol*, Addison-Wesley, Reading, MA, 1998.
- [**Mukherjee 1997**] B. Mukherjee, *Optical Communication Networks*, McGraw-Hill, 1997.
- [**Mukherjee 2006**] B. Mukherjee, *Optical WDM Networks*, Springer, 2006.
- [**Mysore 2009**] R. N. Mysore, A. Pamboris, N. Farrington, N. Huang, P. Miri, S. Radhakrishnan, V. Subramanya, A. Vahdat, "PortLand: A Scalable Fault-Tolerant Layer 2 Data Center Network Fabric," *Proc. 2009 ACM SIGCOMM*.

- [**Nahum 2002**] E. Nahum, T. Barzilai, D. Kandlur, "Performance Issues in WWW Servers," *IEEE/ACM Transactions on Networking*, Vol 10, No. 1 (Feb. 2002).
- [**Netflix Open Connect 2016**] Netflix Open Connect CDN, 2016, <https://openconnect.netflix.com/>
- [**Netflix Video 1**] Designing Netflix's Content Delivery System, D. Fulllager, 2014, <https://www.youtube.com/watch?v=LkLLpYdDINA>
- [**Netflix Video 2**] Scaling the Netflix Global CDN, D. Temkin, 2015, [https://www.youtube.com/watch?v=tbqcsHg-Q\\_o](https://www.youtube.com/watch?v=tbqcsHg-Q_o)
- [**Neumann 1997**] R. Neumann, "Internet Routing Black Hole," *The Risks Digest: Forum on Risks to the Public in Computers and Related Systems*, Vol. 19, No. 12 (May 1997). <http://catless.ncl.ac.uk/Risks/19.12.html#subj1.1>
- [**Neville-Neil 2009**] G. Neville-Neil, "Whither Sockets?" *Communications of the ACM*, Vol. 52, No. 6 (June 2009), pp. 51–55.
- [**Nicholson 2006**] A Nicholson, Y. Chawathe, M. Chen, B. Noble, D. Wetherall, "Improved Access Point Selection," *Proc. 2006 ACM Mobisys Conference* (Uppsala Sweden, 2006).
- [**Nielsen 1997**] H. F. Nielsen, J. Gettys, A. Baird-Smith, E. Prud'hommeaux, H. W. Lie, C. Lilley, "Network Performance Effects of HTTP/1.1, CSS1, and PNG," *W3C Document*, 1997 (also appears in *Proc. 1997 ACM SIGCOM* (Cannes, France, Sept 1997), pp. 155–166).
- [**NIST 2001**] National Institute of Standards and Technology, "Advanced Encryption Standard (AES)," Federal Information Processing Standards 197, Nov. 2001, <http://csrc.nist.gov/publications/fips/fips197/fips-197.pdf>
- [**NIST IPv6 2015**] US National Institute of Standards and Technology, "Estimating IPv6 & DNSSEC Deployment Snapshots," <http://fedv6-deployment.antd.nist.gov/snap-all.html>
- [**Nmap 2012**] Nmap homepage, <http://www.insecure.com/nmap>
- [**Nonnenmacher 1998**] J. Nonnenmacher, E. Biersak, D. Towsley, "Parity-Based Loss Recovery for Reliable Multicast Transmission," *IEEE/ACM Transactions on Networking*, Vol. 6, No. 4 (Aug. 1998), pp. 349–361.
- [**Nygren 2010**] Erik Nygren, Ramesh K. Sitaraman, and Jennifer Sun, "The Akamai Network: A Platform for High-performance Internet Applications," *SIGOPS Oper. Syst. Rev.* 44, 3 (Aug. 2010), 2–19.
- [**ONF 2016**] Open Networking Foundation, Technical Library, <https://www.open-networking.org/sdn-resources/technical-library>



- [**ONOS 2016**] Open Network Operating System (ONOS), “Architecture Guide,” <https://wiki.onosproject.org/display/ONOS/Architecture+Guide>, 2016.
- [**OpenFlow 2009**] Open Network Foundation, “OpenFlow Switch Specification 1.0.0, TS-001,” <https://www.opennetworking.org/images/stories/downloads/sdn-resources/onf-specifications/openflow/openflow-spec-v1.0.0.pdf>
- [**OpenDaylight Lithium 2016**] OpenDaylight, “Lithium,” <https://www.opendaylight.org/lithium>
- [**OSI 2012**] International Organization for Standardization homepage, <http://www.iso.org/iso/en/ISOOnline.frontpage>
- [**Osterweil 2012**] E. Osterweil, D. McPherson, S. DiBenedetto, C. Papadopoulos, D. Massey, “Behavior of DNS Top Talkers,” *Passive and Active Measurement Conference*, 2012.
- [**Padhye 2000**] J. Padhye, V. Firoiu, D. Towsley, J. Kurose, “Modeling TCP Reno Performance: A Simple Model and Its Empirical Validation,” *IEEE/ACM Transactions on Networking*, Vol. 8 No. 2 (Apr. 2000), pp. 133–145.
- [**Padhye 2001**] J. Padhye, S. Floyd, “On Inferring TCP Behavior,” *Proc. 2001 ACM SIGCOMM* (San Diego, CA, Aug. 2001).
- [**Palat 2009**] S. Palat, P. Godin, “The LTE Network Architecture: A Comprehensive Tutorial,” in *LTE—The UMTS Long Term Evolution: From Theory to Practice*. Also available as a standalone Alcatel white paper.
- [**Panda 2013**] A. Panda, C. Scott, A. Ghodsi, T. Koponen, S. Shenker, “CAP for Networks,” *Proc. ACM HotSDN '13*, pp. 91–96.
- [**Parekh 1993**] A. Parekh, R. Gallagher, “A Generalized Processor Sharing Approach to Flow Control in Integrated Services Networks: The Single-Node Case,” *IEEE/ACM Transactions on Networking*, Vol. 1, No. 3 (June 1993), pp. 344–357.
- [**Partridge 1992**] C. Partridge, S. Pink, “An Implementation of the Revised Internet Stream Protocol (ST-2),” *Journal of Internetworking: Research and Experience*, Vol. 3, No. 1 (Mar. 1992).
- [**Partridge 1998**] C. Partridge, et al. “A Fifty Gigabit per second IP Router,” *IEEE/ACM Transactions on Networking*, Vol. 6, No. 3 (Jun. 1998), pp. 237–248.
- [**Pathak 2010**] A. Pathak, Y. A. Wang, C. Huang, A. Greenberg, Y. C. Hu, J. Li, K. W. Ross, “Measuring and Evaluating TCP Splitting for Cloud Services,” *Passive and Active Measurement (PAM) Conference* (Zurich, 2010).
- [**Perkins 1994**] A. Perkins, “Networking with Bob Metcalfe,” *The Red Herring Magazine* (Nov. 1994).

- [Perkins 1998] C. Perkins, O. Hodson, V. Hardman, "A Survey of Packet Loss Recovery Techniques for Streaming Audio," *IEEE Network Magazine* (Sept./Oct. 1998), pp. 40–47.
- [Perkins 1998b] C. Perkins, *Mobile IP: Design Principles and Practice*, Addison-Wesley, Reading, MA, 1998.
- [Perkins 2000] C. Perkins, *Ad Hoc Networking*, Addison-Wesley, Reading, MA, 2000.
- [Perlman 1999] R. Perlman, *Interconnections: Bridges, Routers, Switches, and Internetworking Protocols*, 2nd ed., Addison-Wesley Professional Computing Series, Reading, MA, 1999.
- [PGPI 2016] The International PGP homepage, <http://www.pgpi.org>
- [Phifer 2000] L. Phifer, "The Trouble with NAT," *The Internet Protocol Journal*, Vol. 3, No. 4 (Dec. 2000), [http://www.cisco.com/warp/public/759/ipj\\_3-4/ipj\\_3-4\\_nat.html](http://www.cisco.com/warp/public/759/ipj_3-4/ipj_3-4_nat.html)
- [Piatek 2007] M. Piatek, T. Isdal, T. Anderson, A. Krishnamurthy, A. Venkataramani, "Do Incentives Build Robustness in Bittorrent?," *Proc. NSDI* (2007).
- [Piatek 2008] M. Piatek, T. Isdal, A. Krishnamurthy, T. Anderson, "One Hop Reputations for Peer-to-peer File Sharing Workloads," *Proc. NSDI* (2008).
- [Pickholtz 1982] R. Pickholtz, D. Schilling, L. Milstein, "Theory of Spread Spectrum Communication—a Tutorial," *IEEE Transactions on Communications*, Vol. 30, No. 5 (May 1982), pp. 855–884.
- [PingPlotter 2016] PingPlotter homepage, <http://www.pingplotter.com>
- [Piscatello 1993] D. Piscatello, A. Lyman Chapin, *Open Systems Networking*, Addison-Wesley, Reading, MA, 1993.
- [Pomeranz 2010] H. Pomeranz, "Practical, Visual, Three-Dimensional Pedagogy for Internet Protocol Packet Header Control Fields," <https://righteousit.wordpress.com/2010/06/27/practical-visual-three-dimensional-pedagogy-for-internet-protocol-packet-header-control-fields/>, June 2010.
- [Potaroo 2016] "Growth of the BGP Table—1994 to Present," <http://bgp.potaroo.net/>
- [PPLive 2012] PPLive homepage, <http://www.pplive.com>
- [Qazi 2013] Z. Qazi, C. Tu, L. Chiang, R. Miao, V. Sekar, M. Yu, "SIMPLE-fying Middlebox Policy Enforcement Using SDN," *ACM SIGCOMM Conference* (Aug. 2013), pp. 27–38.
- [Quagga 2012] Quagga, "Quagga Routing Suite," <http://www.quagga.net/>

- [Quittner 1998] J. Quittner, M. Slatalla, *Speeding the Net: The Inside Story of Netscape and How It Challenged Microsoft*, Atlantic Monthly Press, 1998.
- [Quova 2016] www.quova.com
- [Ramakrishnan 1990] K. K. Ramakrishnan, R. Jain, "A Binary Feedback Scheme for Congestion Avoidance in Computer Networks," *ACM Transactions on Computer Systems*, Vol. 8, No. 2 (May 1990), pp. 158–181.
- [Raman 1999] S. Raman, S. McCanne, "A Model, Analysis, and Protocol Framework for Soft State-based Communication," *Proc. 1999 ACM SIGCOMM* (Boston, MA, Aug. 1999).
- [Raman 2007] B. Raman, K. Chebrolu, "Experiences in Using WiFi for Rural Internet in India," *IEEE Communications Magazine*, Special Issue on New Directions in Networking Technologies in Emerging Economies (Jan. 2007).
- [Ramaswami 2010] R. Ramaswami, K. Sivarajan, G. Sasaki, *Optical Networks: A Practical Perspective*, Morgan Kaufman Publishers, 2010.
- [Ramjee 1994] R. Ramjee, J. Kurose, D. Towsley, H. Schulzrinne, "Adaptive Payout Mechanisms for Packetized Audio Applications in Wide-Area Networks," *Proc. 1994 IEEE INFOCOM*.
- [Rao 2011] A. S. Rao, Y. S. Lim, C. Barakat, A. Legout, D. Towsley, W. Dabbous, "Network Characteristics of Video Streaming Traffic," *Proc. 2011 ACM CoNEXT* (Tokyo).
- [Ren 2006] S. Ren, L. Guo, X. Zhang, "ASAP: An AS-Aware Peer-Relay Protocol for High Quality VoIP," *Proc. 2006 IEEE ICDCS* (Lisboa, Portugal, July 2006).
- [Rescorla 2001] E. Rescorla, *SSL and TLS: Designing and Building Secure Systems*, Addison-Wesley, Boston, 2001.
- [RFC 001] S. Crocker, "Host Software," RFC 001 (the *very first* RFC!).
- [RFC 768] J. Postel, "User Datagram Protocol," RFC 768, Aug. 1980.
- [RFC 791] J. Postel, "Internet Protocol: DARPA Internet Program Protocol Specification," RFC 791, Sept. 1981.
- [RFC 792] J. Postel, "Internet Control Message Protocol," RFC 792, Sept. 1981.
- [RFC 793] J. Postel, "Transmission Control Protocol," RFC 793, Sept. 1981.
- [RFC 801] J. Postel, "NCP/TCP Transition Plan," RFC 801, Nov. 1981.
- [RFC 826] D. C. Plummer, "An Ethernet Address Resolution Protocol—or—Converting Network Protocol Addresses to 48-bit Ethernet Address for Transmission on Ethernet Hardware," RFC 826, Nov. 1982.

- [RFC 829] V. Cerf, "Packet Satellite Technology Reference Sources," RFC 829, Nov. 1982.
- [RFC 854] J. Postel, J. Reynolds, "TELNET Protocol Specification," RFC 854, May 1993.
- [RFC 950] J. Mogul, J. Postel, "Internet Standard Subnetting Procedure," RFC 950, Aug. 1985.
- [RFC 959] J. Postel and J. Reynolds, "File Transfer Protocol (FTP)," RFC 959, Oct. 1985.
- [RFC 1034] P. V. Mockapetris, "Domain Names—Concepts and Facilities," RFC 1034, Nov. 1987.
- [RFC 1035] P. Mockapetris, "Domain Names—Implementation and Specification," RFC 1035, Nov. 1987.
- [RFC 1058] C. L. Hendrick, "Routing Information Protocol," RFC 1058, June 1988.
- [RFC 1071] R. Braden, D. Borman, and C. Partridge, "Computing the Internet Checksum," RFC 1071, Sept. 1988.
- [RFC 1122] R. Braden, "Requirements for Internet Hosts—Communication Layers," RFC 1122, Oct. 1989.
- [RFC 1123] R. Braden, ed., "Requirements for Internet Hosts—Application and Support," RFC-1123, Oct. 1989.
- [RFC 1142] D. Oran, "OSI IS-IS Intra-Domain Routing Protocol," RFC 1142, Feb. 1990.
- [RFC 1190] C. Topolcic, "Experimental Internet Stream Protocol: Version 2 (ST-II)," RFC 1190, Oct. 1990.
- [RFC 1256] S. Deering, "ICMP Router Discovery Messages," RFC 1256, Sept. 1991.
- [RFC 1320] R. Rivest, "The MD4 Message-Digest Algorithm," RFC 1320, Apr. 1992.
- [RFC 1321] R. Rivest, "The MD5 Message-Digest Algorithm," RFC 1321, Apr. 1992.
- [RFC 1323] V. Jacobson, S. Braden, D. Borman, "TCP Extensions for High Performance," RFC 1323, May 1992.
- [RFC 1422] S. Kent, "Privacy Enhancement for Internet Electronic Mail: Part II: Certificate-Based Key Management," RFC 1422.

- [RFC 1546] C. Partridge, T. Mendez, W. Milliken, "Host Anycasting Service," RFC 1546, 1993.
- [RFC 1584] J. Moy, "Multicast Extensions to OSPF," RFC 1584, Mar. 1994.
- [RFC 1633] R. Braden, D. Clark, S. Shenker, "Integrated Services in the Internet Architecture: an Overview," RFC 1633, June 1994.
- [RFC 1636] R. Braden, D. Clark, S. Crocker, C. Huitema, "Report of IAB Workshop on Security in the Internet Architecture," RFC 1636, Nov. 1994.
- [RFC 1700] J. Reynolds, J. Postel, "Assigned Numbers," RFC 1700, Oct. 1994.
- [RFC 1752] S. Bradner, A. Mankin, "The Recommendations for the IP Next Generation Protocol," RFC 1752, Jan. 1995.
- [RFC 1918] Y. Rekhter, B. Moskowitz, D. Karrenberg, G. J. de Groot, E. Lear, "Address Allocation for Private Internets," RFC 1918, Feb. 1996.
- [RFC 1930] J. Hawkinson, T. Bates, "Guidelines for Creation, Selection, and Registration of an Autonomous System (AS)," RFC 1930, Mar. 1996.
- [RFC 1939] J. Myers, M. Rose, "Post Office Protocol—Version 3," RFC 1939, May 1996.
- [RFC 1945] T. Berners-Lee, R. Fielding, H. Frystyk, "Hypertext Transfer Protocol—HTTP/1.0," RFC 1945, May 1996.
- [RFC 2003] C. Perkins, "IP Encapsulation Within IP," RFC 2003, Oct. 1996.
- [RFC 2004] C. Perkins, "Minimal Encapsulation Within IP," RFC 2004, Oct. 1996.
- [RFC 2018] M. Mathis, J. Mahdavi, S. Floyd, A. Romanow, "TCP Selective Acknowledgment Options," RFC 2018, Oct. 1996.
- [RFC 2131] R. Droms, "Dynamic Host Configuration Protocol," RFC 2131, Mar. 1997.
- [RFC 2136] P. Vixie, S. Thomson, Y. Rekhter, J. Bound, "Dynamic Updates in the Domain Name System," RFC 2136, Apr. 1997.
- [RFC 2205] R. Braden, Ed., L. Zhang, S. Berson, S. Herzog, S. Jamin, "Resource ReSerVation Protocol (RSVP)—Version 1 Functional Specification," RFC 2205, Sept. 1997.
- [RFC 2210] J. Wroclawski, "The Use of RSVP with IETF Integrated Services," RFC 2210, Sept. 1997.
- [RFC 2211] J. Wroclawski, "Specification of the Controlled-Load Network Element Service," RFC 2211, Sept. 1997.

- [RFC 2215] S. Shenker, J. Wroclawski, "General Characterization Parameters for Integrated Service Network Elements," RFC 2215, Sept. 1997.
- [RFC 2326] H. Schulzrinne, A. Rao, R. Lanphier, "Real Time Streaming Protocol (RTSP)," RFC 2326, Apr. 1998.
- [RFC 2328] J. Moy, "OSPF Version 2," RFC 2328, Apr. 1998.
- [RFC 2420] H. Kummert, "The PPP Triple-DES Encryption Protocol (3DESE)," RFC 2420, Sept. 1998.
- [RFC 2453] G. Malkin, "RIP Version 2," RFC 2453, Nov. 1998.
- [RFC 2460] S. Deering, R. Hinden, "Internet Protocol, Version 6 (IPv6) Specification," RFC 2460, Dec. 1998.
- [RFC 2475] S. Blake, D. Black, M. Carlson, E. Davies, Z. Wang, W. Weiss, "An Architecture for Differentiated Services," RFC 2475, Dec. 1998.
- [RFC 2578] K. McCloghrie, D. Perkins, J. Schoenwaelder, "Structure of Management Information Version 2 (SMIPv2)," RFC 2578, Apr. 1999.
- [RFC 2579] K. McCloghrie, D. Perkins, J. Schoenwaelder, "Textual Conventions for SMIPv2," RFC 2579, Apr. 1999.
- [RFC 2580] K. McCloghrie, D. Perkins, J. Schoenwaelder, "Conformance Statements for SMIPv2," RFC 2580, Apr. 1999.
- [RFC 2597] J. Heinanen, F. Baker, W. Weiss, J. Wroclawski, "Assured Forwarding PHB Group," RFC 2597, June 1999.
- [RFC 2616] R. Fielding, J. Gettys, J. Mogul, H. Frystyk, L. Masinter, P. Leach, T. Berners-Lee, R. Fielding, "Hypertext Transfer Protocol—HTTP/1.1," RFC 2616, June 1999.
- [RFC 2663] P. Srisuresh, M. Holdrege, "IP Network Address Translator (NAT) Terminology and Considerations," RFC 2663.
- [RFC 2702] D. Awduche, J. Malcolm, J. Agogbua, M. O'Dell, J. McManus, "Requirements for Traffic Engineering Over MPLS," RFC 2702, Sept. 1999.
- [RFC 2827] P. Ferguson, D. Senie, "Network Ingress Filtering: Defeating Denial of Service Attacks which Employ IP Source Address Spoofing," RFC 2827, May 2000.
- [RFC 2865] C. Rigney, S. Willens, A. Rubens, W. Simpson, "Remote Authentication Dial In User Service (RADIUS)," RFC 2865, June 2000.
- [RFC 3007] B. Wellington, "Secure Domain Name System (DNS) Dynamic Update," RFC 3007, Nov. 2000.

[RFC 3022] P. Srisuresh, K. Egevang, "Traditional IP Network Address Translator (Traditional NAT)," RFC 3022, Jan. 2001.

[RFC 3022] P. Srisuresh, K. Egevang, "Traditional IP Network Address Translator (Traditional NAT)," RFC 3022, Jan. 2001.

[RFC 3031] E. Rosen, A. Viswanathan, R. Callon, "Multiprotocol Label Switching Architecture," RFC 3031, Jan. 2001.

[RFC 3032] E. Rosen, D. Tappan, G. Fedorkow, Y. Rekhter, D. Farinacci, T. Li, A. Conta, "MPLS Label Stack Encoding," RFC 3032, Jan. 2001.

[RFC 3168] K. Ramakrishnan, S. Floyd, D. Black, "The Addition of Explicit Congestion Notification (ECN) to IP," RFC 3168, Sept. 2001.

[RFC 3209] D. Awduche, L. Berger, D. Gan, T. Li, V. Srinivasan, G. Swallow, "RSVP-TE: Extensions to RSVP for LSP Tunnels," RFC 3209, Dec. 2001.

[RFC 3221] G. Huston, "Commentary on Inter-Domain Routing in the Internet," RFC 3221, Dec. 2001.

[RFC 3232] J. Reynolds, "Assigned Numbers: RFC 1700 Is Replaced by an Online Database," RFC 3232, Jan. 2002.

[RFC 3234] B. Carpenter, S. Brim, "Middleboxes: Taxonomy and Issues," RFC 3234, Feb. 2002.

[RFC 3246] B. Davie, A. Charny, J.C.R. Bennet, K. Benson, J.Y. Le Boudec, W. Courtney, S. Davari, V. Firoiu, D. Stiliadis, "An Expedited Forwarding PHB (Per-Hop Behavior)," RFC 3246, Mar. 2002.

[RFC 3260] D. Grossman, "New Terminology and Clarifications for Diffserv," RFC 3260, Apr. 2002.

[RFC 3261] J. Rosenberg, H. Schulzrinne, G. Carmarillo, A. Johnston, J. Peterson, R. Sparks, M. Handley, E. Schooler, "SIP: Session Initiation Protocol," RFC 3261, July 2002.

[RFC 3272] J. Boyle, V. Gill, A. Hannan, D. Cooper, D. Awduche, B. Christian, W. S. Lai, "Overview and Principles of Internet Traffic Engineering," RFC 3272, May 2002.

[RFC 3286] L. Ong, J. Yoakum, "An Introduction to the Stream Control Transmission Protocol (SCTP)," RFC 3286, May 2002.

[RFC 3346] J. Boyle, V. Gill, A. Hannan, D. Cooper, D. Awduche, B. Christian, W. S. Lai, "Applicability Statement for Traffic Engineering with MPLS," RFC 3346, Aug. 2002.

- [RFC 3390] M. Allman, S. Floyd, C. Partridge, "Increasing TCP's Initial Window," RFC 3390, Oct. 2002.
- [RFC 3410] J. Case, R. Mundy, D. Partain, "Introduction and Applicability Statements for Internet Standard Management Framework," RFC 3410, Dec. 2002.
- [RFC 3414] U. Blumenthal and B. Wijnen, "User-based Security Model (USM) for Version 3 of the Simple Network Management Protocol (SNMPv3)," RFC 3414, Dec. 2002.
- [RFC 3416] R. Presuhn, J. Case, K. McCloghrie, M. Rose, S. Waldbusser, "Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)," Dec. 2002.
- [RFC 3439] R. Bush, D. Meyer, "Some Internet Architectural Guidelines and Philosophy," RFC 3439, Dec. 2003.
- [RFC 3447] J. Jonsson, B. Kaliski, "Public-Key Cryptography Standards (PKCS) #1: RSA Cryptography Specifications Version 2.1," RFC 3447, Feb. 2003.
- [RFC 3468] L. Andersson, G. Swallow, "The Multiprotocol Label Switching (MPLS) Working Group Decision on MPLS Signaling Protocols," RFC 3468, Feb. 2003.
- [RFC 3469] V. Sharma, Ed., F. Hellstrand, Ed., "Framework for Multi-Protocol Label Switching (MPLS)-based Recovery," RFC 3469, Feb. 2003.  
<ftp://ftp.rfc-editor.org/in-notes/rfc3469.txt>
- [RFC 3501] M. Crispin, "Internet Message Access Protocol—Version 4rev1," RFC 3501, Mar. 2003.
- [RFC 3550] H. Schulzrinne, S. Casner, R. Frederick, V. Jacobson, "RTP: A Transport Protocol for Real-Time Applications," RFC 3550, July 2003.
- [RFC 3588] P. Calhoun, J. Loughney, E. Guttman, G. Zorn, J. Arkko, "Diameter Base Protocol," RFC 3588, Sept. 2003.
- [RFC 3649] S. Floyd, "HighSpeed TCP for Large Congestion Windows," RFC 3649, Dec. 2003.
- [RFC 3746] L. Yang, R. Dantu, T. Anderson, R. Gopal, "Forwarding and Control Element Separation (ForCES) Framework," Internet, RFC 3746, Apr. 2004.
- [RFC 3748] B. Aboba, L. Blunk, J. Vollbrecht, J. Carlson, H. Levkowitz, Ed., "Extensible Authentication Protocol (EAP)," RFC 3748, June 2004.
- [RFC 3782] S. Floyd, T. Henderson, A. Gurtov, "The NewReno Modification to TCP's Fast Recovery Algorithm," RFC 3782, Apr. 2004.



- [RFC 4213] E. Nordmark, R. Gilligan, "Basic Transition Mechanisms for IPv6 Hosts and Routers," RFC 4213, Oct. 2005.
- [RFC 4271] Y. Rekhter, T. Li, S. Hares, Ed., "A Border Gateway Protocol 4 (BGP-4)," RFC 4271, Jan. 2006.
- [RFC 4272] S. Murphy, "BGP Security Vulnerabilities Analysis," RFC 4274, Jan. 2006.
- [RFC 4291] R. Hinden, S. Deering, "IP Version 6 Addressing Architecture," RFC 4291, Feb. 2006.
- [RFC 4340] E. Kohler, M. Handley, S. Floyd, "Datagram Congestion Control Protocol (DCCP)," RFC 4340, Mar. 2006.
- [RFC 4443] A. Conta, S. Deering, M. Gupta, Ed., "Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification," RFC 4443, Mar. 2006.
- [RFC 4346] T. Dierks, E. Rescorla, "The Transport Layer Security (TLS) Protocol Version 1.1," RFC 4346, Apr. 2006.
- [RFC 4514] K. Zeilenga, Ed., "Lightweight Directory Access Protocol (LDAP): String Representation of Distinguished Names," RFC 4514, June 2006.
- [RFC 4601] B. Fenner, M. Handley, H. Holbrook, I. Kouvelas, "Protocol Independent Multicast—Sparse Mode (PIM-SM): Protocol Specification (Revised)," RFC 4601, Aug. 2006.
- [RFC 4632] V. Fuller, T. Li, "Classless Inter-domain Routing (CIDR): The Internet Address Assignment and Aggregation Plan," RFC 4632, Aug. 2006.
- [RFC 4960] R. Stewart, ed., "Stream Control Transmission Protocol," RFC 4960, Sept. 2007.
- [RFC 4987] W. Eddy, "TCP SYN Flooding Attacks and Common Mitigations," RFC 4987, Aug. 2007.
- [RFC 5000] RFC editor, "Internet Official Protocol Standards," RFC 5000, May 2008.
- [RFC 5109] A. Li (ed.), "RTP Payload Format for Generic Forward Error Correction," RFC 5109, Dec. 2007.
- [RFC 5216] D. Simon, B. Aboba, R. Hurst, "The EAP-TLS Authentication Protocol," RFC 5216, Mar. 2008.
- [RFC 5218] D. Thaler, B. Aboba, "What Makes for a Successful Protocol?," RFC 5218, July 2008.

- [RFC 5321] J. Klensin, "Simple Mail Transfer Protocol," RFC 5321, Oct. 2008.
- [RFC 5322] P. Resnick, Ed., "Internet Message Format," RFC 5322, Oct. 2008.
- [RFC 5348] S. Floyd, M. Handley, J. Padhye, J. Widmer, "TCP Friendly Rate Control (TFRC): Protocol Specification," RFC 5348, Sept. 2008.
- [RFC 5389] J. Rosenberg, R. Mahy, P. Matthews, D. Wing, "Session Traversal Utilities for NAT (STUN)," RFC 5389, Oct. 2008.
- [RFC 5411] J. Rosenberg, "A Hitchhiker's Guide to the Session Initiation Protocol (SIP)," RFC 5411, Feb. 2009.
- [RFC 5681] M. Allman, V. Paxson, E. Blanton, "TCP Congestion Control," RFC 5681, Sept. 2009.
- [RFC 5944] C. Perkins, Ed., "IP Mobility Support for IPv4, Revised," RFC 5944, Nov. 2010.
- [RFC 6265] A. Barth, "HTTP State Management Mechanism," RFC 6265, Apr. 2011.
- [RFC 6298] V. Paxson, M. Allman, J. Chu, M. Sargent, "Computing TCP's Retransmission Timer," RFC 6298, June 2011.
- [RFC 7020] R. Housley, J. Curran, G. Huston, D. Conrad, "The Internet Numbers Registry System," RFC 7020, Aug. 2013.
- [RFC 7094] D. McPherson, D. Oran, D. Thaler, E. Osterweil, "Architectural Considerations of IP Anycast," RFC 7094, Jan. 2014.
- [RFC 7323] D. Borman, R. Braden, V. Jacobson, R. Scheffenegger (ed.), "TCP Extensions for High Performance," RFC 7323, Sept. 2014.
- [RFC 7540] M. Belshe, R. Peon, M. Thomson (Eds), "Hypertext Transfer Protocol Version 2 (HTTP/2)," RFC 7540, May 2015.
- [Richter 2015] P. Richter, M. Allman, R. Bush, V. Paxson, "A Primer on IPv4 Scarcity," *ACM SIGCOMM Computer Communication Review*, Vol. 45, No. 2 (Apr. 2015), pp. 21–32.
- [Roberts 1967] L. Roberts, T. Merrill, "Toward a Cooperative Network of Time-Shared Computers," *AFIPS Fall Conference* (Oct. 1966).
- [Rodriguez 2010] R. Rodrigues, P. Druschel, "Peer-to-Peer Systems," *Communications of the ACM*, Vol. 53, No. 10 (Oct. 2010), pp. 72–82.
- [Rohde 2008] Rohde, Schwarz, "UMTS Long Term Evolution (LTE) Technology Introduction," Application Note 1MA111.

[Rom 1990] R. Rom, M. Sidi, *Multiple Access Protocols: Performance and Analysis*, Springer-Verlag, New York, 1990.

[Root Servers 2016] Root Servers home page, <http://www.root-servers.org/>

[RSA 1978] R. Rivest, A. Shamir, L. Adelman, "A Method for Obtaining Digital Signatures and Public-key Cryptosystems," *Communications of the ACM*, Vol. 21, No. 2 (Feb. 1978), pp. 120–126.

[RSA Fast 2012] RSA Laboratories, "How Fast Is RSA?" <http://www.rsa.com/rsalabs/node.asp?id=2215>

[RSA Key 2012] RSA Laboratories, "How Large a Key Should Be Used in the RSA Crypto System?" <http://www.rsa.com/rsalabs/node.asp?id=2218>

[Rubenstein 1998] D. Rubenstein, J. Kurose, D. Towsley, "Real-Time Reliable Multicast Using Proactive Forward Error Correction," *Proceedings of NOSSDAV '98* (Cambridge, UK, July 1998).

[Ruiz-Sanchez 2001] M. Ruiz-Sánchez, E. Biersack, W. Dabbous, "Survey and Taxonomy of IP Address Lookup Algorithms," *IEEE Network Magazine*, Vol. 15, No. 2 (Mar./Apr. 2001), pp. 8–23.

[Saltzer 1984] J. Saltzer, D. Reed, D. Clark, "End-to-End Arguments in System Design," *ACM Transactions on Computer Systems (TOCS)*, Vol. 2, No. 4 (Nov. 1984).

[Sandvine 2015] "Global Internet Phenomena Report, Spring 2011," [http://www.sandvine.com/news/global\\_broadband\\_trends.asp](http://www.sandvine.com/news/global_broadband_trends.asp), 2011.

[Sardar 2006] B. Sardar, D. Saha, "A Survey of TCP Enhancements for Last-Hop Wireless Networks," *IEEE Commun. Surveys and Tutorials*, Vol. 8, No. 3 (2006), pp. 20–34.

[Saroiu 2002] S. Saroiu, P. K. Gummadi, S. D. Gribble, "A Measurement Study of Peer-to-Peer File Sharing Systems," *Proc. of Multimedia Computing and Networking (MMCN)* (2002).

[Sauter 2014] M. Sauter, *From GSM to LTE-Advanced*, John Wiley and Sons, 2014.

[Savage 2015] D. Savage, J. Ng, S. Moore, D. Slice, P. Paluch, R. White, "Enhanced Interior Gateway Routing Protocol," Internet Draft, draft-savage-eigrp-04.txt, Aug. 2015.

[Saydam 1996] T. Saydam, T. Magedanz, "From Networks and Network Management into Service and Service Management," *Journal of Networks and System Management*, Vol. 4, No. 4 (Dec. 1996), pp. 345–348.

- [Schiller 2003] J. Schiller, *Mobile Communications* 2nd edition, Addison Wesley, 2003.
- [Schneier 1995] B. Schneier, *Applied Cryptography: Protocols, Algorithms, and Source Code in C*, John Wiley and Sons, 1995.
- [Schulzrinne-RTP 2012] Henning Schulzrinne's RTP site, <http://www.cs.columbia.edu/~hgs/rtp>
- [Schulzrinne-SIP 2016] Henning Schulzrinne's SIP site, <http://www.cs.columbia.edu/~hgs/sip>
- [Schwartz 1977] M. Schwartz, *Computer-Communication Network Design and Analysis*, Prentice-Hall, Englewood Cliffs, NJ, 1977.
- [Schwartz 1980] M. Schwartz, *Information, Transmission, Modulation, and Noise*, McGraw Hill, New York, NY 1980.
- [Schwartz 1982] M. Schwartz, "Performance Analysis of the SNA Virtual Route Pacing Control," *IEEE Transactions on Communications*, Vol. 30, No. 1 (Jan. 1982), pp. 172–184.
- [Scourias 2012] J. Scourias, "Overview of the Global System for Mobile Communications: GSM." <http://www.privateline.com/PCS/GSM0.html>
- [SDNHub 2016] SDNHub, "App Development Tutorials," <http://sdnhub.org/tutorials/>
- [Segaller 1998] S. Segaller, *Nerds 2.0.1, A Brief History of the Internet*, TV Books, New York, 1998.
- [Sekar 2011] V. Sekar, S. Ratnasamy, M. Reiter, N. Egi, G. Shi, "The Middlebox Manifesto: Enabling Innovation in Middlebox Deployment," *Proc. 10th ACM Workshop on Hot Topics in Networks (HotNets)*, Article 21, 6 pages.
- [Serpanos 2011] D. Serpanos, T. Wolf, *Architecture of Network Systems*, Morgan Kaufmann Publishers, 2011.
- [Shacham 1990] N. Shacham, P. McKenney, "Packet Recovery in High-Speed Networks Using Coding and Buffer Management," *Proc. 1990 IEEE INFOCOM* (San Francisco, CA, Apr. 1990), pp. 124–131.
- [Shaikh 2001] A. Shaikh, R. Tewari, M. Agrawal, "On the Effectiveness of DNS-based Server Selection," *Proc. 2001 IEEE INFOCOM*.
- [Singh 1999] S. Singh, *The Code Book: The Evolution of Secrecy from Mary, Queen of Scots to Quantum Cryptography*, Doubleday Press, 1999.

[Singh 2015] A. Singh, J. Ong, Agarwal, G. Anderson, A. Armistead, R. Banno, S. Boving, G. Desai, B. Felderman, P. Germano, A. Kanagala, J. Provost, J. Simmons, E. Tanda, J. Wanderer, U. Hölzle, S. Stuart, A. Vahdat, "Jupiter Rising: A Decade of Clos Topologies and Centralized Control in Google's Datacenter Network," Sigcomm, 2015.

[SIP Software 2016] H. Schulzrinne Software Package site, <http://www.cs.columbia.edu/IRT/software>

[Skoudis 2004] E. Skoudis, L. Zeltser, *Malware: Fighting Malicious Code*, Prentice Hall, 2004.

[Skoudis 2006] E. Skoudis, T. Liston, *Counter Hack Reloaded: A Step-by-Step Guide to Computer Attacks and Effective Defenses (2nd Edition)*, Prentice Hall, 2006.

[Smith 2009] J. Smith, "Fighting Physics: A Tough Battle," *Communications of the ACM*, Vol. 52, No. 7 (July 2009), pp. 60–65.

[Snort 2012] Sourcefire Inc., Snort homepage, <http://http://www.snort.org/>

[Solensky 1996] F. Solensky, "IPv4 Address Lifetime Expectations," in *IPng: Internet Protocol Next Generation* (S. Bradner, A. Mankin, ed.), Addison-Wesley, Reading, MA, 1996.

[Spragins 1991] J. D. Spragins, *Telecommunications Protocols and Design*, Addison-Wesley, Reading, MA, 1991.

[Srikant 2004] R. Srikant, *The Mathematics of Internet Congestion Control*, Birkhauser, 2004

[Steinder 2002] M. Steinder, A. Sethi, "Increasing Robustness of Fault Localization Through Analysis of Lost, Spurious, and Positive Symptoms," *Proc. 2002 IEEE INFOCOM*.

[Stevens 1990] W. R. Stevens, *Unix Network Programming*, Prentice-Hall, Englewood Cliffs, NJ.

[Stevens 1994] W. R. Stevens, *TCP/IP Illustrated, Vol. 1: The Protocols*, Addison-Wesley, Reading, MA, 1994.

[Stevens 1997] W.R. Stevens, *Unix Network Programming, Volume 1: Networking APIs-Sockets and XTI*, 2nd edition, Prentice-Hall, Englewood Cliffs, NJ, 1997.

[Stewart 1999] J. Stewart, *BGP4: Interdomain Routing in the Internet*, Addison-Wesley, 1999.

- [**Stone 1998**] J. Stone, M. Greenwald, C. Partridge, J. Hughes, "Performance of Checksums and CRC's Over Real Data," *IEEE/ACM Transactions on Networking*, Vol. 6, No. 5 (Oct. 1998), pp. 529–543.
- [**Stone 2000**] J. Stone, C. Partridge, "When Reality and the Checksum Disagree," *Proc. 2000 ACM SIGCOMM* (Stockholm, Sweden, Aug. 2000).
- [**Strayer 1992**] W. T. Strayer, B. Dempsey, A. Weaver, *XTP: The Xpress Transfer Protocol*, Addison-Wesley, Reading, MA, 1992.
- [**Stubblefield 2002**] A. Stubblefield, J. Ioannidis, A. Rubin, "Using the Fluhrer, Mantin, and Shamir Attack to Break WEP," *Proceedings of 2002 Network and Distributed Systems Security Symposium* (2002), pp. 17–22.
- [**Subramanian 2000**] M. Subramanian, *Network Management: Principles and Practice*, Addison-Wesley, Reading, MA, 2000.
- [**Subramanian 2002**] L. Subramanian, S. Agarwal, J. Rexford, R. Katz, "Characterizing the Internet Hierarchy from Multiple Vantage Points," *Proc. 2002 IEEE INFOCOM*.
- [**Sundaresan 2006**] K. Sundaresan, K. Papagiannaki, "The Need for Cross-layer Information in Access Point Selection," *Proc. 2006 ACM Internet Measurement Conference* (Rio De Janeiro, Oct. 2006).
- [**Suh 2006**] K. Suh, D. R. Figueiredo, J. Kurose and D. Towsley, "Characterizing and Detecting Relayed Traffic: A Case Study Using Skype," *Proc. 2006 IEEE INFOCOM* (Barcelona, Spain, Apr. 2006).
- [**Sunshine 1978**] C. Sunshine, Y. Dalal, "Connection Management in Transport Protocols," *Computer Networks*, North-Holland, Amsterdam, 1978.
- [**Tariq 2008**] M. Tariq, A. Zeitoun, V. Valancius, N. Feamster, M. Ammar, "Answering What-If Deployment and Configuration Questions with WISE," *Proc. 2008 ACM SIGCOMM* (Aug. 2008).
- [**TechOnline 2012**] TechOnline, "Protected Wireless Networks," online webcast tutorial, [http://www.techonline.com/community/tech\\_topic/internet/21752](http://www.techonline.com/community/tech_topic/internet/21752)
- [**Teixeira 2006**] R. Teixeira, J. Rexford, "Managing Routing Disruptions in Internet Service Provider Networks," *IEEE Communications Magazine* (Mar. 2006).
- [**Think 2012**] Technical History of Network Protocols, "Cyclades," <http://www.cs.utexas.edu/users/chris/think/Cyclades/index.shtml>
- [**Tian 2012**] Y. Tian, R. Dey, Y. Liu, K. W. Ross, "China's Internet: Topology Mapping and Geolocating," *IEEE INFOCOM Mini-Conference 2012* (Orlando, FL, 2012).

[**TLD list 2016**] TLD list maintained by Wikipedia, [https://en.wikipedia.org/wiki/List\\_of\\_Internet\\_top-level\\_domains](https://en.wikipedia.org/wiki/List_of_Internet_top-level_domains)

[**Tobagi 1990**] F. Tobagi, "Fast Packet Switch Architectures for Broadband Integrated Networks," *Proc. 1990 IEEE INFOCOM*, Vol. 78, No. 1 (Jan. 1990), pp. 133–167.

[**TOR 2016**] Tor: Anonymity Online, <http://www.torproject.org>

[**Torres 2011**] R. Torres, A. Finamore, J. R. Kim, M. M. Munafo, S. Rao, "Dissecting Video Server Selection Strategies in the YouTube CDN," *Proc. 2011 Int. Conf. on Distributed Computing Systems*.

[**Tourrilhes 2014**] J. Tourrilhes, P. Sharma, S. Banerjee, J. Petit, "SDN and Open-flow Evolution: A Standards Perspective," *IEEE Computer Magazine*, Nov. 2014, pp. 22–29.

[**Turner 1988**] J. S. Turner, "Design of a Broadcast packet switching network," *IEEE Transactions on Communications*, Vol. 36, No. 6 (June 1988), pp. 734–743.

[**Turner 2012**] B. Turner, "2G, 3G, 4G Wireless Tutorial," <http://blogs.nmscommunications.com/communications/2008/10/2g-3g-4g-wireless-tutorial.html>

[**UPnP Forum 2016**] UPnP Forum homepage, <http://www.upnp.org/>

[**van der Berg 2008**] R. van der Berg, "How the 'Net Works: An Introduction to Peering and Transit," <http://arstechnica.com/guides/other/peering-and-transit.ars>

[**van der Merwe 1998**] J. van der Merwe, S. Rooney, I. Leslie, S. Crosby, "The Tempest: A Practical Framework for Network Programmability," *IEEE Network*, Vol. 12, No. 3 (May 1998), pp. 20–28.

[**Varghese 1997**] G. Varghese, A. Lauck, "Hashed and Hierarchical Timing Wheels: Efficient Data Structures for Implementing a Timer Facility," *IEEE/ACM Transactions on Networking*, Vol. 5, No. 6 (Dec. 1997), pp. 824–834.

[**Vasudevan 2012**] S. Vasudevan, C. Diot, J. Kurose, D. Towsley, "Facilitating Access Point Selection in IEEE 802.11 Wireless Networks," *Proc. 2005 ACM Internet Measurement Conference*, (San Francisco CA, Oct. 2005).

[**Villamizar 1994**] C. Villamizar, C. Song. "High Performance TCP in ANSNET," *ACM SIGCOMM Computer Communications Review*, Vol. 24, No. 5 (1994), pp. 45–60.

[**Viterbi 1995**] A. Viterbi, *CDMA: Principles of Spread Spectrum Communication*, Addison-Wesley, Reading, MA, 1995.

[**Vixie 2009**] P. Vixie, "What DNS Is Not," *Communications of the ACM*, Vol. 52, No. 12 (Dec. 2009), pp. 43–47.

- [Wakeman 1992] I. Wakeman, J. Crowcroft, Z. Wang, D. Sirovica, "Layering Considered Harmful," *IEEE Network* (Jan. 1992), pp. 20–24.
- [Waldrop 2007] M. Waldrop, "Data Center in a Box," *Scientific American* (July 2007).
- [Wang 2004] B. Wang, J. Kurose, P. Shenoy, D. Towsley, "Multimedia Streaming via TCP: An Analytic Performance Study," *Proc. 2004 ACM Multimedia Conference* (New York, NY, Oct. 2004).
- [Wang 2008] B. Wang, J. Kurose, P. Shenoy, D. Towsley, "Multimedia Streaming via TCP: An Analytic Performance Study," *ACM Transactions on Multimedia Computing Communications and Applications (TOMCCAP)*, Vol. 4, No. 2 (Apr. 2008), p. 16. 1–22.
- [Wang 2010] G. Wang, D. G. Andersen, M. Kaminsky, K. Papagiannaki, T. S. E. Ng, M. Kozuch, M. Ryan, "c-Through: Part-time Optics in Data Centers," *Proc. 2010 ACM SIGCOMM*.
- [Wei 2006] W. Wei, C. Zhang, H. Zang, J. Kurose, D. Towsley, "Inference and Evaluation of Split-Connection Approaches in Cellular Data Networks," *Proc. Active and Passive Measurement Workshop* (Adelaide, Australia, Mar. 2006).
- [Wei 2007] D. X. Wei, C. Jin, S. H. Low, S. Hegde, "FAST TCP: Motivation, Architecture, Algorithms, Performance," *IEEE/ACM Transactions on Networking* (2007).
- [Weiser 1991] M. Weiser, "The Computer for the Twenty-First Century," *Scientific American* (Sept. 1991): 94–10. <http://www.ubiq.com/hypertext/weiser/SciAmDraft3.html>
- [White 2011] A. White, K. Snow, A. Matthews, F. Monroe, "Hookt on fon-iks: Phonotactic Reconstruction of Encrypted VoIP Conversations," *IEEE Symposium on Security and Privacy*, Oakland, CA, 2011.
- [Wigle.net 2016] Wireless Geographic Logging Engine, <http://www.wigle.net>
- [Wiki Satellite 2016] Satellite Internet access, [https://en.wikipedia.org/wiki/Satellite\\_Internet\\_access](https://en.wikipedia.org/wiki/Satellite_Internet_access)
- [Wireshark 2016] Wireshark homepage, <http://www.wireshark.org>
- [Wischik 2005] D. Wischik, N. McKeown, "Part I: Buffer Sizes for Core Routers," *ACM SIGCOMM Computer Communications Review*, Vol. 35, No. 3 (July 2005).



- [Woo 1994] T. Woo, R. Bindignavle, S. Su, S. Lam, "SNP: an interface for secure network programming," *Proc. 1994 Summer USENIX* (Boston, MA, June 1994), pp. 45–58.
- [Wright 2015] J. Wright, J. *Wireless Security Secrets & Solutions*, 3e, "Hacking Exposed Wireless," McGraw-Hill Education, 2015.
- [Wu 2005] J. Wu, Z. M. Mao, J. Rexford, J. Wang, "Finding a Needle in a Haystack: Pinpointing Significant BGP Routing Changes in an IP Network," *Proc. USENIX NSDI* (2005).
- [Xanadu 2012] Xanadu Project homepage, <http://www.xanadu.com/>
- [Xiao 2000] X. Xiao, A. Hannan, B. Bailey, L. Ni, "Traffic Engineering with MPLS in the Internet," *IEEE Network* (Mar./Apr. 2000).
- [Xu 2004] L. Xu, K Harfoush, I. Rhee, "Binary Increase Congestion Control (BIC) for Fast Long-Distance Networks," *IEEE INFOCOM 2004*, pp. 2514–2524.
- [Yavatkar 1994] R. Yavatkar, N. Bhagwat, "Improving End-to-End Performance of TCP over Mobile Internetworks," *Proc. Mobile 94 Workshop on Mobile Computing Systems and Applications* (Dec. 1994).
- [YouTube 2009] YouTube 2009, Google container data center tour, 2009.
- [YouTube 2016] YouTube Statistics, 2016, <https://www.youtube.com/yt/press/statistics.html>
- [Yu 2004] Yu, Fang, H. Katz, Tirunellai V. Lakshman. "Gigabit Rate Packet Pattern-Matching Using TCAM," *Proc. 2004 Int. Conf. Network Protocols*, pp. 174–183.
- [Yu 2011] M. Yu, J. Rexford, X. Sun, S. Rao, N. Feamster, "A Survey of VLAN Usage in Campus Networks," *IEEE Communications Magazine*, July 2011.
- [Zegura 1997] E. Zegura, K. Calvert, M. Donahoo, "A Quantitative Comparison of Graph-based Models for Internet Topology," *IEEE/ACM Transactions on Networking*, Vol. 5, No. 6, (Dec. 1997). See also <http://www.cc.gatech.edu/projects/gtim> for a software package that generates networks with a transit-stub structure.
- [Zhang 1993] L. Zhang, S. Deering, D. Estrin, S. Shenker, D. Zappala, "RSVP: A New Resource Reservation Protocol," *IEEE Network Magazine*, Vol. 7, No. 9 (Sept. 1993), pp. 8–18.
- [Zhang 2007] L. Zhang, "A Retrospective View of NAT," *The IETF Journal*, Vol. 3, Issue 2 (Oct. 2007).

- [Zhang 2015] G. Zhang, W. Liu, X. Hei, W. Cheng, "Unreeling Xunlei Kankan: Understanding Hybrid CDN-P2P Video-on-Demand Streaming," *IEEE Transactions on Multimedia*, Vol. 17, No. 2, Feb. 2015.
- [Zhang X 2102] X. Zhang, Y. Xu, Y. Liu, Z. Guo, Y. Wang, "Profiling Skype Video Calls: Rate Control and Video Quality," *IEEE INFOCOM* (Mar. 2012).
- [Zink 2009] M. Zink, K. Suh, Y. Gu, J. Kurose, "Characteristics of YouTube Network Traffic at a Campus Network—Measurements, Models, and Implications," *Computer Networks*, Vol. 53, No. 4, pp. 501–514, 2009.