References

1. Albin, S. L., Approximating Queues with Superposition Arrival Processes, *Doctoral dissertation*, Columbia University, 1981.

2. Aldous, D., Ultimate Instability of Exponential Back-Off Protocol for Acknowledgment-Based Transmission Control of Random Access Communication Channels, *IEEE Trans. on Information Theory 33*, 2 (March 1987), 219-223.

3. Anderson, D. P., R. Govindan, G. Homsy and R. Wahbe, Integrated Digital Continuous Media: a Framework Based on Mach, X11, and TCP/IP, *International Computer Science Institute*, Feb. 1990.

4. Babaoglu, O. and W. N. Joy, Converting a Swap-Based System to do Paging in an Architecture Lacking Page-Referenced Bits, *Proc. of the 8th Symposium on Operating System Principles*, 1981, 78-86.

5. Babaoglu, O., *Virtual Storage Management in the Absence of Reference Bits*, Ph.D. dissertation, Computer Science Division, University of California, Berkeley, Nov. 1981.

6. Barlett, M. S., The Spectral Analysis of Point Processes, *J. R. statist. Soc. B 25* (1963), 264-296.

7. Barnett, L. and M. K. Molloy, ILMON: A UNIX Network Monitoring Facility, *Usenix Conference Proceedings*, Washington, DC, Jan. 1987, 133-144.

8. Bartlett, M. S., *An Introduction to Stochastic Processes (2nd edition)*, Cambridge University Press, 1966.

9. Boggs, D. R., J. C. Mogul and C. A. Kent, Measured Capacity of an Ethernet: Myths and Reality, *Proceedings of SIGCOMM 18*, 4 (August 1988), 222-234.

10. Box, G. E. P. and G. M. Jenkins, *Time Series Analysis, Forecasting, and Control*, Holden-Day, San Francisco, 1976.

11. Brillinger, D. D., Comparative Aspects of the Study of Ordinary Time Series and of Point Processes, in Developments in Statistics, P.R. Krishnaiah, Ed., *Academic Press, vol. 1*, New York, 1978, 33-133.

12. Caceres, R., Measurements of Wide-Area Internet Traffic, Report UCB/CSD 89/550, Computer Science Division, University of California, Berkeley, December 1989.

13. Charnock, D. M., Continuous Time Spectral Analysis of Intervals between Events in Stationary Point Processes, *Journal of the Royal Statist. Soc. B*, 39 (1977), 48-55.

14. Cheriton, D. R., VMTP: a Transport Protocol for the Next Generation of Communication Systems, *Proc. of SIGCOMM '86*, Aug. 1986, 406-415.

15. Cheriton, D. R. and C. L. Williamson, Network Measurement of the VMTP Request-Response Protocol in the V Distributed System, *Proceedings of ACM Sigmetrics*, 1987, 216-225.

16. Cheriton, D. R., The V Distributed System, *Communications of the ACM 31*, 3 (Mar. 1988), 314-333.

17. Cheriton, D. R. and T. Mann, Decentralizing a Global Naming Service for Improved Performance and Fault Tolerance, *ACM TOCS 7*, 2 (May 1989), 147-183.

18. Cox, D. R. and H. D. Miller, *The Theory of Stochastic Processes*, Methuen, London, 1965.

19. Cox, D. R. and P. A. W. Lewis, *The Statistical Analysis of Series of Events*, Chapman and Hall, London, 1966.

20. Cox, D. R. and V. Isham, *Point Processes*, Chapman and Hall, New York, 1980.

21. Crane, R. C. and E. A. Taft, Practical Considerations in Ethernet Local Network Design, *Proc. of the 13th Hawaii Intl. Conf. on Systems Science*, Jan. 1980, 166-174.

22. Cruz, R. L., A Calculus for Network Delay and a Note on Topologies of Interconnection Networks, Ph.D. Dissertation, Report no. UILU-ENG-87-2246, University of Illinois, July 1987.

23. Digital Equipment Corporation, Intel Corporation, and Xerox Corporation, *The Ethernet: A Local Area Network Data Link Layer and Physical Layer Specifications*, Version 2.0, July 15, 1982.

24. Feldmeier, D. C., *Empirical Analysis of a Token Ring Network*, Tech. Memo. MIT/LCS/TM-254, M.I.T. Laboratory Computing Science, Jan. 1984.

25. Fendick, K. W., V. R. Saksena and W. Whitt, *Dependence in Packet Queues, I: A Multi-Class Batch-Poisson Model*, unpublished paper, AT&T Bell Laboratories, 1987.

26. Fendick, K. W. and W. Whitt, Measurements and Approximations to Describe the Offered Traffic and Predict the Average Workload in a Single-Server Queue, *Proceedings of the IEEE 77*, 1 (January 1989), 171-194.

27. Ferrari, D. and D. C. Verma, A Scheme for Real-Time Channel Establishment in Wide-Area Networks, Report Technical Report-89-036, ICSI, May 1989.

28. Fisher, W. and K. S. Meier-Hellstern, *The MMPP Cookbook*, INRS-Telecommunications, Verdun, Quebec, and AT&T Bell Laboratories, Holmdel, NJ, in preparation, 1990.

29. Fontana, B. and A. Guerrero, Packet Traffic Characterization, Arrival Laws, and Waiting Times, *12th Int. Teletraffic Congress*, Turin, June 1988.

30. Gonsalves, T. A., Performance Characteristics of two Ethernets: an Experimental Study, *Proceedings of the ACM SIGCOMM Conference*, May 1985, 78-86.

31. Goodman, J., A. G. Greenberg, N. Madras and P. March, Stability of Binary Exponential Backoff, *Journal of the ACM 35*, 3 (July 1988), 579-602.

32. Granger, C. W. J., The Typical Shape of an Econometric Variable, *Econometrica 34* (1966), 150-161.

33. Gusella, R., A Measurement Study of Diskless Workstation Traffic on an Ethernet, *IEEE Transactions on Communications 38*, 9 (September 1990), 1557-1568.

34. Gusella, R., Characterizing the Variability of Arrival Processes with Indices of Dispersion, *IEEE Journal on Selected Areas in Communications*, (to appear) February 1991.

35. Heffes, H. and D. M. Lucantoni, A Markov Modulated Characterization of Packetized Voice and Data Traffic and Related Statistical Multiplexer Performance, *IEEE Journal on Selected Areas in Communications SAC-4*, 6 (September 1986), 856-868.

36. Heimlich, S. A., Traffic Characterization of the NFSNET National Backbone, *Proceedings of the 1990 Usenix Conference*, January 1990.

37. Intel, 82586 Local Area Network Coprocessor, Technical Information Sheets, December 1986.

38. First International Workshop on Network and Operating System Support for Digital Audio and Video, ICSI Report Technical Report-90-062, International Computer Science Institute, Berkeley, California, November 8-9, 1990.

39. Jacobson, V., private communication, July 1988.

40. Jacobson, V., Some Interim Notes on the BDS Network Speedups, message posted on the 'comp.protocols.tcp-ip' news group, July 20, 1988.

41. Jain, R. and W. R. Hawe, Performance Analysis and Modelling of Digital's Networking Architecture, *Digital Technical Journal*, Sept. 1986, 25-34.

42. Jain, R. and S. A. Routhier, Packet Trains – Measurements and a New Model for Computer Network Traffic, *IEEE Journal on Selected Areas in Communications SAC-4*, 6 (September 1986), 986-995.

43. Karels, M. J., *Another Internet Subnet Addressing Scheme*, University of California, Berkeley, Feb. 1985.

44. Karels, M. J., private communication, Feb. 1987.

45. Kendall, M. G. and A. Stuart, *The Advanced Theory of Statistics*, Griffin, London, 1983.

46. Kleinrock, L., *Queueing Systems, vol. 1: Theory*, Wiley and Sons, 1975.

47. Kleinrock, L., Computer-Communication Networks: Measurements, Flow Control, and ARPANET Traps, in *Queueing Systems*, vol. 2: Computer Applications , Wiley and Sons, 1976.

48. Lam, S. S., A Carrier Sense Multiple Access Protocol for Local Networks, *Computer Networks 4*, 1 (February 1980), 21-32.

49. Lazowska, E. D., J. Zahorjan, D. R. Cheriton and W. Zwaenepoel, File Access Performance of Diskless Workstations, *ACM Transactions on Computer Systems 4*, 3 (Aug. 1986), 238-270.

50. Leach, P. J., P. H. Levine, B. P. Douros, J. A. Hamilton, D. L. Nelson and B. L. Stumpf, The Architecture of an Integrated Local Network, *IEEE Journal on Selected Areas in Communications 1*, 5 (Nov. 1983), 842-857.

51. Leland, W. E., LAN Traffic Behavior from Milliseconds to Days, *Broadband Technologies: Architectures, Applications, Control and Performance*, Morristown, New Jersey, October 1990.

52. Lewis, P. A. W., A Branching Poisson Process Model for the Analysis of Computer Failure Patterns, *J. R. statist. Soc. B 26* (1964), 398-456.

53. Lyon, B., Sun External Data Representation Specification, Technical Report, Sun Microsystems, Inc., 1984.

54. Marshall, W. T. and S. P. Morgan, Statistics of Mixed Data Traffic on a Local Area Network, *Teletraffic Issues in an Advanced Information Society*, Kyoto, Japan, 1985,

569-575.

55. McKusick, M. K., W. N. Joy, S. J. Leffler and S. J. Fabry, A Fast File System for UNIX, *ACM Transactions on Computer Systems 2*, 3 (Aug. 1984), 181-197.

56. Meier, K. S., A Statistical Procedure for Fitting Markov-Modulated Poisson Processes, Ph.D. dissertation, University of Delaware, 1984.

57. Metcalfe, R. M. and D. R. Boggs, Ethernet: Distributed Packet Switching for Local Computer Networks, *Communications of the ACM 19*, 7 (July 1976), 395-404.

58. Mogul, J., Internet Subnets, Internet Network Working Group, RFC 917, Stanford University, Oct. 1984.

59. Nelson, M., B. Welch and J. Ousterhout, Caching in the Sprite Network File System, *ACM TOCS 6*, 1 (Feb. 1988), 134-154.

60. Neuts, M. F., *Structured Stochastic Matrices of M/G/1 Type and Their Applications*, M. Dekker Inc., New York, 1989.

61. Neuts, M. F. and 1986, The Caudal Characteristic Curve of Queues, *Adv. Appl. Prob. 18* , 221-254.

62. Nomura, M., T. Fujii and N. Ohta, Basic Characteristics of Variable Rate Video Coding in ATM Environment, *IEEE Journal on Selected Areas in Communications 7*, 5 (June 1989), 752-760.

63. Nowicki, B., NFS, Network File System Protocol, Internet Network Working Group, RFC 1094, Sun Microsystems, Inc., March 1989.

64. Ousterhout, J., H. Da Costa, D. Harrison, J. Kunze, M. Kupfer and J. Thompson, A Trace-Driven Analysis of the UNIX 4.2BSD File System, *Proceedings of 10th ACM Symposium on Operating System Principles*, Orcas Island, WA, December 1985.

65. Pawlita, P. F., Two Decades of Data Traffic Measurements: a Survey of Published Results, Experiences and Applicability, *Proceedings of the 12th International Telecommunication Conference*, Torino, June 1988.

66. Plummer, D. C., An Address Resolution Protocol, Internet Network Working Group, RFC 826, Massachussets Institute of Technology, Nov. 1982.

67. Postel, J., Simple Mail Transfer Protocol, Internet Network Working Group, RFC 821, USC Information Sciences Institute, Aug. 1982.

68. Postel J., Ed., User Datagram Protocol, Internet Network Working Group, RFC 768, USC Information Sciences Institute, Aug. 1980.

69. Postel J., Ed., Internet Protocol – DARPA Internet Program Protocol Specification, Internet Network Working Group, RFC 791, USC Information Sciences Institute, Sept. 1981.

70. Postel J., Ed., Transmission Control Protocol, Internet Network Working Group, RFC 793, USC Information Sciences Institute, Sept. 1981.

71. Presotto, D., private communication, July 1987.

72. Pyke, R., Markov Renewal Processes: Definitions and Preliminary Properties, *Ann. math Statist. 32* (1961), 1231-1242.

73. Pyke, R., Markov Renewal Processes with Finitely Many States, *Ann. math Statist. 32* (1961), 1243-1259.

74. Ramaswami, V. and G. Latouche, Modeling Packet Arrivals from Asynchronous Input Lines, *12th Int. Teletraffic Congress*, Turin, June 1988.

75. Reynolds, J. and J. Postel, Official Internet Protocols, Internet Network Working Group, RFC 1011, USC Information Sciences Institute, May 1987.

76. Rifkin, A. P., M. P. Forbes, R. L. Hamilton, M. Sabrio, S.Shah and K. Yueh, RFS Architectural Overview, *Usenix Conference Proceedings*, Atlanta, June 1986, 248-259.

77. Sandberg, R., D. Goldberg, S. Kleinman, D. Walsh and B. Lyon, Design and Implementation of the Sun Network Filesystem, *Usenix Conference Proceedings*, June 1985, 119-130.

78. Scheifler, R. W. and J. Gettys, The X Window System, *ACM Transactions on Graphics 5*, 2 (Apr. 1986), 79-109.

79. Shenker, S., Some Conjectures on the Behavior of Acknowledgement-Based Transmission Control of Random Access Communication Channels, *Proceedings of ACM Sigmetrics*, 1987, 245-255.

80. Shoch, J. F. and J. F. Hupp, Measured Performance of an Ethernet Local Network, *Communications of the ACM 23*, 12 (December 1980), 711-721.

81. Shoch, J. F., Y. K. Dalal, D. D. Redell and R. C. Crane, The Ethernet, in *Local Area Networks: An Advanced Course*, Hutchinson, D., J. Mariani and D. Shepherd (editor), Springer-Verlag, 1982, 549-572.

82. Smith, W. L., Regenerative Stochastic Processes, *Trans. Amer. math. Soc. 104* (1955), 79-100.

83. Song, C. and L. H. Landweber, Optimizing Bulk Data Transfer Performance: a Packet Train Approach, *Proceedings of ACM SIGCOMM*, 1988, 134-145.

84. Sriram, K. and W. Whitt, Characterizing Superposition Arrival Processes in Packet Multiplexers for Voice and Data, *IEEE Journal on Selected Areas in Communications SAC-4*, 7 (September 1986), 833-846.

85. Sun Microsystems, *ND(8)*, UNIX User's Manual, Section 8, 1983.

86. Sun Microsystems, SunOS Release 4.0 Reference Manual, 1988.

87. Sun Microsystems, RPC: Remote Procedure Call Protocol Specification, Internet Network Working Group, RFC 1050, April 1988.

88. Sventek, J., W. Greiman, M. O'Dell and A. Jansen, A Comparison of Experimental and Theoretical Performance, *Computer Networks*, August 1984, 301-309.

89. Swinehart, D., G. McDaniel and D. Boggs, WFS: A Simple Shared File System for a Distributed Environment, *Proc. of the 7th ACM Symposium on Operating System Principles*, Dec. 1979, 9-17.

90. Thacker, C. P., E. M. McCreight, B. W. Lampson and D. R. Boggs, Alto: A Personal Computer, in *Computer Structures: Principles and Examples*, Siewiorek, D. P., C. G. Bell and A. Newell (editor), McGraw-Hill Book Co., 1982, 549-572.

91. Thompson, K., UNIX Time-Sharing System: UNIX Implementation, *Bell System Technical Journal 57*, 6 (July-Aug. 1978), 1931-1946.

92. Tzou, S., Software Mechanisms for Multiprocessor TLB Consistency, Ph.D. dissertation, UCB Technical Report 89/551, University of California, Berkeley, December 1989.

93. Wilson, D. V. and W. E. Leland, High Time-Resolution Measurement and Analysis of LAN Traffic: Implications for BISDN Networks, *Proceedings of the 1990 Bellcore Symposium on Performance Modeling*, Livingston, NJ, May 1990.

94. Young, M., A. Tevanian, R. Rashid, D. Golub, J. Eppinger, J. Chew, W. Bolosky, D. Black and R. Baron, The Duality of Memory and Communication in the Implementation of a Multiprocessor Operating System, *Proc. of the 11th ACM Symposium on Operating System Principles*, 1987, 63-76.

95. Zhou, S., H. D. Costa and A. J. Smith, A File System Tracing Package for Berkeley UNIX, *Report No. UCB/CSD 85/235,* University of California, Berkeley, May 1985.