

Bibliography

- [1] M. Ajmone Marsan, G. Balbo, G. Conte, S. Donatelli, and G. Franceschinis. *Modelling with Generalized Stochastic Petri Nets*. Wiley Series in Parallel Computing. John Wiley & Sons, 1995.
- [2] V. Almeida, J. Almeida, and C. Murta. Performance analysis of a WWW server. Technical Report 1996-018, Computer Science Department, Boston University and UFMG, Aug. 1996. <http://www.cs.bu.edu/techreports/1996-018-www-performance-analysis.ps.Z>.
- [3] S. Andradóttir. Simulation optimization. In Banks [12], pages 307–333.
- [4] B. Appleton. Patterns and software: Essential concepts and terminology. Online: <http://www.enteract.com/~bradapp/docs/patterns-intro.html>.
- [5] Arena. Online: <http://www.arenasimulation.com/>.
- [6] M. Arlitt and C. Williamson. Internet web servers: Workload characterization and performance implications. *IEEE Transactions on Networking*, 5(5):631–645, 1997.
- [7] Artifex. Online: <http://www.artis-software.com/solutions/artifex/index.html>.
- [8] R. Bagrodia and M. Gerla. A modular and scalable simulation tool for large wireless networks. In *Proceedings of Performance Tools '98*, 1998.
- [9] R. Bagrodia, R. Meyer, M. Takai, Y. Chen, X. Zeng, J. Martin, and H. Y. Song. Parsec: A parallel simulation environment for complex systems. *Computer*, 31(10):77–85, October 1998.
- [10] G. Balbo. Introduction to Stochastic Petri Nets. In Brinksma et al. [23], pages 84–155.
- [11] P. Ballarini, S. Donatelli, and G. Franceschinis. Parametric stochastic well-formed nets and compositional modelling. In M. Nielsen and D. Simpson, editors, *Application and Theory of Petri Nets 2000*, volume 1825 of *Lecture Notes in Computer Science*, pages 43–62. Springer, 2000.
- [12] J. Banks, editor. *Handbook of Simulation*. John Wiley & Sons, Inc., 1998.

- [13] J. Banks. Principles of simulation. In *Handbook of Simulation* [12], pages 3–30.
- [14] P. Barford and M. E. Crovella. Generating representative web workloads for network and server performance evaluation. In *Performance '98/ACM SIGMETRICS '98*, pages 151–160. Madison WI, 1998.
- [15] F. Bause, P. Buchholz, and P. Kemper. QPN-tool for the specification and analysis of hierarchically combined Queueing Petri Nets. In H. Beilner and F. Bause, editors, *Quantitative Evaluation of Computing and Communication Systems*, volume 977 of *Lecture Notes in Computer Science*, pages 224–238. Springer, 1995.
- [16] M. Beaudouin-Lafon et al. CPN/Tools: A post-WIMP interface for editing and simulating coloured Petri nets. In J.-M. Colom and M. Koutny, editors, *Application and Theory of Petri Nets 2001*, volume 2075 of *Lecture Notes in Computer Science*, pages 71–80. Springer, 2001.
- [17] M. Beaudouin-Lafon and W. E. Mackay. Reification, polymorphism and reuse: Three principles for designing visual interfaces. In *Proceedings of Advanced Visual Interfaces*, pages 102–109. ACM Press, 2000.
- [18] S. Bernardi, S. Donatelli, and A. Horváth. Compositionality in the Great-SPN tool and its application to the modelling of industrial applications. In K. Jensen, editor, *Practical Use of High-level Petri Nets: Workshop Proceedings*, DAIMI PB-547, pages 127–145, 2000.
- [19] T. Berners-Lee, R. Fielding, and H. Nielsen. Hypertext Transfer Protocol – HTTP/1.0. Technical Report RFC 1945, Network Working Group, May 1996. <http://www.cis.ohio-state.edu/htbin/rfc/rfc1945.html>.
- [20] G. Berthelot. Transformations and decompositions of nets. In Brauer, W., Reisig, W., and Rozenberg, G., editors, *Petri Nets: Central Models and Their Properties, Advances in Petri Nets 1986*, volume 254 of *Lecture Notes in Computer Science*, pages 359–376. Springer-Verlag, 1987.
- [21] H. Bowman, J. W. Bryans, and J. Derrick. Analysis of a multimedia stream using stochastic process algebra. In C. Priami, editor, *Sixth International Workshop on Process Algebras and Performance Modelling*, pages 51–69, 1998.
- [22] E. Brinksma and H. Hermanns. Process algebra and markov chains. In Brinksma et al. [23], pages 183–231.
- [23] E. Brinksma, H. Hermanns, and J.-P. Katoen, editors. *Lectures on Formal Methods and Performance Analysis*, volume 2090 of *Lecture Notes in Computer Science*. Springer, 2001.
- [24] C. Capellmann, S. Christensen, and U. Herzog. Visualising the behaviour of intelligent networks. In T. Margaria, B. Steffen, R. Rückert, and J. Posegga, editors, *Services and Visualization: Toward User-Friendly*

- Design*, volume 1385 of *Lecture Notes in Computer Science*, pages 174–190. Springer, 1998.
- [25] C. Capellmann and H. Dibold. Formal specifications of services in an intelligent network using high-level Petri nets. In *Case Study Proceedings of the 15th International Conference on Application and Theory of Petri Nets*, 1994.
- [26] CAPLAN project. Online: <http://www.daimi.au.dk/CPnets/CAPLAN/>.
- [27] L. Cherkasova, V. Kotov, and T. Rokicki. On scalable net modeling of OLTP. In *Proceedings of 5th International Workshop on Petri Nets and Performance Models*, pages 270–279. IEEE Computer Society Press, 1993.
- [28] G. Chiola, C. Dutheillet, G. Franceschinis, and S. Haddad. Stochastic well-formed coloured nets for symmetric modelling applications. *IEEE Transactions on Computers*, 42(11):1343–1360, November 1993.
- [29] G. Chiola, G. Franceschinis, R. Gaeta, and M. Ribaud. GreatSPN 1.7: Graphical editor and analyzer for Timed and Stochastic Petri Nets. *Performance Evaluation*, 24(1&2):47–68, November 1995. Special issue on Performance Modeling Tools.
- [30] S. Christensen and J. B. Jørgensen. Analysis of Bang & Olufsen’s BeoLink audio/video system using coloured Petri nets. In P. Azéma and G. Balbo, editors, *Application and Theory of Petri Nets 1997*, volume 1248 of *Lecture Notes in Computer Science*, pages 387–406. Springer-Verlag, 1997.
- [31] S. Christensen, J. B. Jørgensen, and L. M. Kristensen. Design/CPN - a computer tool for coloured Petri nets. In E. Brinksma, editor, *Tools and Algorithms for the Construction and Analysis of Systems - TACAS’97*, volume 1217 of *Lecture Notes in Computer Science*, pages 209–223. Springer-Verlag, 1997.
- [32] G. Ciardo, L. Cherkasova, V. Kotov, and T. Rokicki. Modeling a Scaleable High-Speed Interconnect with Stochastic Petri Nets. In *Proceeding of PNPM’95*, pages 83–93. IEEE Computer Society Press, 1995.
- [33] G. Clark et al. The Möbius modeling tool. In R. German and B. Haverkort, editors, *Proceedings of the 9th International Workshop on Petri Nets and Performance Models*, pages 241–250, 2001.
- [34] E. M. Clarke, J. M. Wing, et al. Formal methods: State of the art and future directions. *ACM Computing Surveys*, 28(4):626–643, 1996.
- [35] H. Clausen and P. R. Jensen. Validation and performance analysis of network algorithms by coloured Petri nets. In *Proceeding of PNPM’93*, pages 280–289. IEEE Computer Society Press, 1993.
- [36] H. Clausen and P. R. Jensen. Analysis of Usage Parameter Control algorithms for ATM networks. In S. Tohmé and A. Casada, editors, *Broadband*

- Communications II (C-24)*, pages 297–310. Elsevier Science Publishers, 1994.
- [37] CPN Tools. Online: <http://wiki.daimi.au.dk/cpntools/>.
- [38] J. C. A. de Figueirido and L. M. Kristensen. Using coloured Petri nets to investigate behavioural and performance issues of TCP protocols. In K. Jensen, editor, *CPN Workshop 1999*, DAIMI PB-541, 1999.
- [39] J. Desel and W. Reisig. Place/Transition Petri nets. In Reisig and Rozenberg [108], pages 122–173.
- [40] Design/CPN. Online: <http://www.daimi.au.dk/designCPN/>.
- [41] J. Dille, R. Friedrich, T. Jin, and J. Rolia. Web server performance measurement and modeling techniques. *Performance Evaluation*, 33(1):5–26, 1998.
- [42] DSPNexpress. Online: <http://ls4-www.informatik.uni-dortmund.de/~Lindemann/software/DSPNexpress/>.
- [43] ExSpect. Online: <http://www.exspect.com/>.
- [44] R. Fielding, J. Gettys, J. Mogul, H. Nielsen, and T. Berners-Lee. Hypertext Transfer Protocol – HTTP/1.1. Technical Report RFC 2068, Network Working Group, March 1997. <http://www.cis.ohio-state.edu/htbin/rfc/rfc2068.html>.
- [45] D. Flanagan. *Java in a Nutshell*. O’Reilly, 3rd edition, 1999.
- [46] J. M. Forneau, L. Kloul, and F. Valois. Performance modelling of hierarchical cellular networks using PEPA. In J. Hillston, editor, *Proceedings of the Seventh Annual Workshop on Process Algebra and Performance Modelling*, pages 139–154. University of Zaragoza Press, 1999.
- [47] G. Franceschinis, C. Bertinocello, G. Bruno, G. L. Vaschetti, and A. Pigozzi. SWN models of a contact center: a case study. In R. German and B. Haverkort, editors, *Proceedings of the 9th International Workshop on Petri Nets and Performance Models*, pages 39–48. IEEE, 2001.
- [48] R. Gaeta and M. A. Marsan. SWN analysis and simulation of large knockout ATM switches. In J. Desel and M. Silva, editors, *Application and Theory of Petri Nets 1998*, volume 1420 of *Lecture Notes in Computer Science*, pages 326–344. Springer, 1998.
- [49] G. Gallasch and L. M. Kristensen. COMMS/CPN: A communication infrastructure for external communication with Design/CPN. In K. Jensen, editor, *Third Workshop and Tutorial on Practical Use of Coloured Petri Nets and the CPN Tools*, DAIMI PB-554, pages 75–91. Department of Computer Science, University of Aarhus, Denmark, 2001.

- [50] E. Gamma, R. Helm, R. Johnson, and J. Vlissides. *Design Patterns: Elements of Reusable Object Oriented Software*. Addison-Wesley, 1995.
- [51] R. German, C. Kelling, A. Zimmerman, and G. Hommel. TimeNET: a toolkit for evaluating non-markovian stochastic Petri nets. *Performance Evaluation*, 24:69–87, 1995.
- [52] S. Gilmore and J. Hillston. The PEPA Workbench: A tool to support a process algebra-based approach to performance modelling. In G. Haring and G. Kotsis, editors, *Proceedings of the Seventh International Conference on Modelling Techniques and Tools for Computer Performance Evaluation*, volume 794 of *Lecture Notes in Computer Science*, pages 353–368. Springer-Verlag, 1994.
- [53] gnuplot. Online: <http://www.gnuplot.info/>.
- [54] D. Goldsman and B. L. Nelson. Comparing systems via simulation. In Banks [12], pages 273–306.
- [55] S. Gordon. *Verification of the WAP Transaction Layer using Coloured Petri Nets*. PhD thesis, University of South Australia, 2001.
- [56] S. Gordon and J. Billington. Analysing the WAP class 2 wireless transaction protocol using coloured Petri nets. In M. Nielsen and D. Simpson, editors, *Application and Theory of Petri Nets 2000*, volume 1825 of *Lecture Notes in Computer Science*, pages 207–226, 2000.
- [57] GreatSPN. Online: <http://www.di.unito.it/~greatspn/>.
- [58] S. Haddad. A reduction theory for coloured nets. In *Advances in Petri Nets 1989*, volume 424 of *Lecture Notes in Computer Science*, pages 209–235. Springer-Verlag, 1989.
- [59] D. Harel and M. Politi. *Modeling Reactive Systems with Statecharts*. McGraw-Hill, 1998.
- [60] B. R. Haverkort. Markovian models for performance and dependability evaluation. In Brinksma et al. [23], pages 38–83.
- [61] J. Heidemann, K. Obraczka, and J. Touch. Modeling the performance of HTTP over several transport protocols. *IEEE Transactions on Networking*, 5(5):616–630, 1997.
- [62] J. Hillston. *A Compositional Approach to Performance Modelling*. Cambridge University Press, 1996.
- [63] HiQPN. Online: <http://ls4-www.informatik.uni-dortmund.de/QPN/>.
- [64] J. E. Hopcroft and J. D. Ullman. *Introduction to Automata Theory, Languages, and Computation*. Addison-Wesley, 2nd edition, 1979.
- [65] HP-CPN Centre. Online: <http://www.daimi.au.dk/CPnets/HP/>.

- [66] INFORMS (Institute for Operations Research and the Management Sciences) Simulation Links and Information. Online: <http://www.informs-cs.org/geninfo.html>.
- [67] ITU-T Recommendation Z.120, Message Sequence Chart (MSC), 1996.
- [68] A. Iyengar, E. MacNair, and T. Nguyen. An analysis of web server performance. In *GLOBECOM 97*, volume 3, pages 1943–1947. IEEE, 1997.
- [69] R. Jain. *The Art of Computer Systems Performance Analysis: Techniques for Experimental Design, Measurement, Simulation, and Modeling*. John Wiley & Sons, Inc., 1991.
- [70] K. Jensen. *Coloured Petri Nets: Basic Concepts, Analysis Methods and Practical Use. Vol. 1, Basic Concepts*. Monographs in Theoretical Computer Science. Springer-Verlag, 1997. 2nd corrected printing.
- [71] K. Jensen. *Coloured Petri Nets: Basic Concepts, Analysis Methods and Practical Use. Vol. 2, Analysis Methods*. Monographs in Theoretical Computer Science. Springer-Verlag, 1997. 2nd corrected printing.
- [72] K. Jensen. *Coloured Petri Nets: Basic Concepts, Analysis Methods and Practical Use. Vol. 3, Practical Use*. Monographs in Theoretical Computer Science. Springer-Verlag, 1997.
- [73] K. Jensen and G. Rozenberg, editors. *High-level Petri Nets*. Springer-Verlag, 1991.
- [74] C. Kelling. A framework for rare event simulation of stochastic Petri nets using "RESTART". In J. Charnes, D. Morrice, D. Brunner, and J. Swain, editors, *Proceedings of the 1996 Winter Simulation Conference*, pages 317–324, 1996.
- [75] W. D. Kelton, R. P. Sadowski, and D. A. Sadowski. *Simulation with Arena*. McGraw-Hill, 1998.
- [76] W. D. Kelton, R. P. Sadowski, and D. A. Sadowski. *Simulation with Arena*. McGraw-Hill, 2nd. edition, 2002.
- [77] J. P. C. Kleijnen. Experimental design for sensitivity analysis, optimization, and validation of simulation models. In J. Banks, editor, *Handbook of Simulation*. Wiley, New York, 1993.
- [78] L. Kleinrock. *Queueing Systems, Vol. 1, Theory*. John Wiley, 1975.
- [79] L. M. Kristensen, J. Bogorad, S. Christensen, K. Jensen, B. Lindstrøm, K. H. Mortensen, J. S. Thomasen, and L. M. Wells. *HTTP Web Servers – Part A*. Number HP-CPN-1 in HP-CPN Project Report Series. HP-CPN Centre, Department of Computer Science, University of Aarhus, May 1998. <http://www.daimi.au.dk/CPnets/HP/>.

- [80] L. M. Kristensen, S. Christensen, and K. Jensen. The practitioner's guide to coloured Petri nets. *International Journal on Software Tools for Technology Transfer*, 2:98–132, 1998.
- [81] O. Kummer, F. Weinberg, and M. Duvigneau. *Renew – User Guide*. Department for Informatics, University of Hamburg, May 2001.
- [82] T. T. Kwan, R. E. McGrath, and D. A. Reed. NCSA's World Wide Web server: Design and performance. *Computer*, 28(11):68–74, Nov. 1995.
- [83] C. Lakos. On the abstraction of coloured Petri nets. In *Application and Theory of Petri Nets 1997*, volume 1248 of *Lecture Notes in Computer Science*, pages 42–61. Springer-Verlag, 1997.
- [84] A. M. Law and W. D. Kelton. *Simulation Modeling & Analysis*. McGraw-Hill, 3rd edition, 2000.
- [85] C. Lindemann. DSPNexpress: a software package for the efficient solution of deterministic and stochastic Petri nets. *Performance Evaluation*, 22:3–21, 1995.
- [86] C. Lindemann. *Performance Modelling with Deterministic and Stochastic Petri Nets*. John Wiley and Sons, 1998.
- [87] B. Lindstrøm and L. Wells. *Design/CPN Performance Tool Manual*. Department of Computer Science, University of Aarhus, Denmark, 1999. Online: <http://www.daimi.au.dk/designCPN/man/>.
- [88] B. Lindstrøm and L. Wells. Performance Analysis Using Coloured Petri Nets. Master's thesis, University of Aarhus, May 1999.
- [89] B. Lindstrøm and L. Wells. Annotating coloured Petri nets. To appear in the proceedings of the Fourth Workshop and Tutorial on Practical Use of Coloured Petri Nets and the CPN Tools (CPN'02), 2002.
- [90] B. Lindstrøm and L. Wells. Towards a monitoring framework for discrete-event system simulations. To appear in the proceedings of the 6th International Workshop on Discrete Event Systems (WODES'02), 2002.
- [91] L. Lorentsen, A.-P. Tuovinen, and J. Xu. Modelling of features and feature interactions in Nokia mobile phones using coloured Petri nets. In J. Esparza and C. Lakos, editors, *Applications and Theory of Petri Nets 2002*, volume 2360 of *Lecture Notes in Computer Science*, pages 299–313. Springer, 2002.
- [92] Message Sequence Charts in Design/CPN
Online: <http://www.daimi.au.dk/designCPN/libs/mscharts/>.
- [93] M. Molloy. *On the Integration of Delay and Throughput Measures in Distributed Processing Models*. PhD thesis, University of California at Los Angeles (UCLA), 1981.

- [94] G. Moncelet, S. Christensen, H. Demmou, M. Paludetto, and J. Porras. Analysing a mechatronic system with coloured Petri nets. *International Journal on Software Tools for Technology Transfer*, 2(2):160–167, December 1998.
- [95] K. Mortensen, S. Christensen, L. Kristensen, and J. Thomasen. Capacity planning of web servers using timed hierarchical coloured Petri nets. In *Proceedings of HP Openview University Association (HP-OVUA '99), 6th Plenary Workshop*, Bologna, Italy, 1999.
- [96] K. H. Mortensen. Efficient data-structures and algorithms for a coloured Petri nets simulator. In K. Jensen, editor, *Third Workshop and Tutorial on Practical Use of Coloured Petri Nets and the CPN Tools*, 2001. Available online at <http://www.daimi.au.dk/CPnets/workshop01/>.
- [97] C. Musciano, B. Kennedy, and M. Loukides, editors. *HTML: The Definitive Guide*. O'Reilly & Associates, 3rd edition, September 1998.
- [98] W. D. Obal, II and W. H. Sanders. An environment for importance sampling based on stochastic activity networks. In *Symposium on Reliable Distributed Systems*, pages 64–73. IEEE Press, 1994.
- [99] Observer pattern. Online: <http://ootips.org/observer-pattern.html>.
- [100] L. C. Paulson. *ML for the Working Programmer*. Cambridge University Press, 2nd edition, 1996.
- [101] C. D. Pegden, R. E. Shannon, and R. P. Sadowski. *Introduction To Simulation Using SIMAN*. McGraw-Hill, 2nd edition, 1995.
- [102] PEPA: Performance Evaluation Process Algebra. Online: <http://www.dcs.ed.ac.uk/home/stg/PEPA/>.
- [103] C. A. Petri. *Kommunikation mit Automaten*. Schriften des IIM nr. 2, Institut für Instrumentelle Mathematik, Bonn, 1962.
- [104] Petri Nets Tool Database. Online: <http://www.daimi.au.dk/PetriNets/tools/db.html>.
- [105] Petri Nets World. Online: <http://www.daimi.au.dk/PetriNets/>.
- [106] J. L. Rasmussen and M. Singh. *Mimic/CPN: A Graphic Animation Utility for Design/CPN*. Department of Computer Science, University of Aarhus, Denmark. Online: <http://www.daimi.au.dk/designCPN/libs/mimic/>.
- [107] J. L. Rasmussen and M. Singh. Designing and analysing a security system by means of coloured Petri nets. In J. Billington and W. Reisig, editors, *Proceedings of ICTAPN*, volume 1091 of *Lecture Notes in Computer Science*, pages 400–419. Springer-Verlag, 1996.
- [108] W. Reisig and G. Rozenberg, editors. *Lectures on Petri Nets 1: Basic Models*, volume 1491 of *Lecture Notes in Computer Science*. Springer, 1998.

- [109] Renew. Online: <http://www.renew.de/>.
- [110] W. H. Sanders. *Construction and Solution of Performability Models Based on Stochastic Activity Networks*. PhD thesis, University of Michigan, 1988.
- [111] W. H. Sanders and J. F. Meyer. A unified approach for specifying measures of performance, dependability, and performability. *Dependable Computing for Critical Applications*, 4:214–237, 1991. Springer-Verlag.
- [112] W. H. Sanders and J. F. Meyer. Stochastic activity networks: Formal definitions and concepts. In Brinksma et al. [23], pages 315–343.
- [113] W. H. Sanders, W. D. Obal, II, M. A. Qureshi, and F. K. Widjanarko. The UltraSAN modeling environment. *Performance Evaluation*, 24:89–115, 1995.
- [114] SIGMETRICS. Online: <http://www.sigmetrics.org/>.
- [115] W. Stallings. *Data & Computer Communications*. Prentice-Hall, 6th edition, 2000.
- [116] Standard ML of New Jersey. Online: <http://cm.bell-labs.com/cm/cs/what/smlnj/>.
- [117] J. J. Swain. Imagine new worlds: Simulation survey. *OR/MS Today*, pages 38–51, February 1999.
- [118] H. A. Taha. *Modeling and SIMNET*. Prentice-Hall, 1988.
- [119] TimeNET. Online: <http://pdv.cs.tu-berlin.de/~timenet/>.
- [120] UltraSAN. Online: <http://chaos.crhc.uiuc.edu/UltraSAN/UltraSAN.html>.
- [121] A. Valmari. The state explosion problem. In Reisig and Rozenberg [108], pages 429–528.
- [122] W. M. P. van der Aalst et al. ExSpect 6.4: An executable specification tool for hierarchical colored Petri nets. In M. Nielsen and D. Simpson, editors, *Application and Theory of Petri Nets 2000*, volume 1825 of *Lecture Notes in Computer Science*, pages 455–464. Springer-Verlag, 2000.
- [123] R. D. van der Mei, R. Hariharan, and P. K. Reeser. Web server performance modeling. *Telecommunication Systems*, 16(3-4):316–378, 2001.
- [124] H. M. W. Verbeek and W. M. P. van der Aalst. Woflan 2.0: A Petri net-based workflow diagnosis tool. In M. Nielsen and D. Simpson, editors, *Application and Theory of Petri Nets 2000*, volume 1825 of *Lecture Notes in Computer Science*, pages 475–484. Springer-Verlag, 2000.
- [125] M. Villapol and J. Billington. Modelling and the initial analysis of the Resource Reservation Protocol using coloured Petri nets. In K. Jensen, editor, *Proceedings of the Workshop on Practical Use of High-Level Petri Nets*, DAIMI PB-547, 2000.

- [126] L. Wells. Performance analysis using coloured Petri nets. To appear in the proceedings of the Tenth IEEE/ACM International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS'02), 2002.
- [127] L. Wells, S. Christensen, L. M. Kristensen, and K. Mortensen. Simulation based performance analysis of web servers. In R. German and B. Haverkort, editors, *Proceedings of the 9th International Workshop on Petri Nets and Performance Models*, pages 59–68. IEEE, 2001.
- [128] Winter Simulation Conference. Online: <http://www.wintersim.org/>.