
References

1. Parosh Aziz Abdulla, Karlis Cerans, Bengt Jonsson, and Yih-Kuen Tsay. Algorithmic analysis of programs with well quasi-ordered domains. *Information and Computation*, 160(1-2):109–127, 2000.
2. Parosh Aziz Abdulla, S. Purushothaman Iyer, and Aletta Nylén. Unfoldings of unbounded Petri nets. In E. Allen Emerson and A. Prasad Sistla, editors, *CAV*, volume 1855 of *Lecture Notes in Computer Science*, pages 495–507. Springer, 2000.
3. Rajeev Alur and David L. Dill. A theory of timed automata. *Theoretical Computer Science*, 126(2):183–235, 1994.
4. André Arnold. *Finite Transition Systems: Semantics of Communicating Systems*. Prentice Hall, 1994.
5. Tuomas Aura and Johan Lilius. A causal semantics for time Petri nets. *Theoretical Computer Science*, 243(1-2):409–447, 2000.
6. Paolo Baldan, Roberto Bruni, and Ugo Montanari. Pre-nets, read arcs and unfolding: A functorial presentation. In Martin Wirsing, Dirk Pattinson, and Rolf Hennicker, editors, *WADT*, volume 2755 of *Lecture Notes in Computer Science*, pages 145–164. Springer, 2002.
7. Paolo Baldan, Andrea Corradini, and Barbara König. Verifying finite-state graph grammars: An unfolding-based approach. In Philippa Gardner and Nobuko Yoshida, editors, *CONCUR*, volume 3170 of *Lecture Notes in Computer Science*, pages 83–98. Springer, 2004.
8. Paolo Baldan, Stefan Haar, and Barbara König. Distributed unfolding of Petri nets. In Luca Aceto and Anna Ingólfssdóttir, editors, *FoSSaCS*, volume 3921 of *Lecture Notes in Computer Science*, pages 126–141. Springer, 2006.
9. Albert Benveniste, Eric Fabre, Claude Jard, and Stefan Haar. Diagnosis of asynchronous discrete event systems, a net unfolding approach. *IEEE Transactions on Automatic Control*, 48(5):714–727, 2003.
10. Albert Benveniste, Stefan Haar, Eric Fabre, and Claude Jard. Distributed monitoring of concurrent and asynchronous systems. In Roberto M. Amadio and Denis Lugiez, editors, *CONCUR*, volume 2761 of *Lecture Notes in Computer Science*, pages 1–26. Springer, 2003.
11. Eike Best and Raymond R. Devillers. Sequential and concurrent behaviour in Petri net theory. *Theoretical Computer Science*, 55(1):87–136, 1987.

12. Eike Best and Javier Esparza. Model checking of persistent Petri nets. In Egon Börger, Gerhard Jäger, Hans Kleine Büning, and Michael M. Richter, editors, *CSL*, volume 626 of *Lecture Notes in Computer Science*, pages 35–52. Springer, 1991.
13. Eike Best and César Fernández. *Nonsequential Processes*. EATCS Monographs on Theoretical Computer Science. Springer, 1988.
14. Armin Biere, Cyrille Artho, and Viktor Schuppan. Liveness checking as safety checking. *Electronic Notes in Theoretical Computer Science*, 66(2), 2002.
15. Blai Bonet, Patrik Haslum, Sarah Hickmott, and Sylvie Thiébaux. Directed unfolding of Petri nets. In *Workshop on Unfolding and Partial Order Techniques (UFO) in 28th International Conference on Application and Theory of Petri Nets and Other Models of Concurrency*, 2007. To appear.
16. Patricia Bouyer, Serge Haddad, and Pierre-Alain Reynier. Timed unfoldings for networks of timed automata. In Graf and Zhang [50], pages 292–306.
17. Julian C. Bradfield and Colin Stirling. Local model checking for infinite state spaces. *Theoretical Computer Science*, 96(1):157–174, 1992.
18. Luboš Brim and Jiří Barnat. Tutorial: Parallel model checking. In Dragan Bosnacki and Stefan Edelkamp, editors, *SPIN*, volume 4595 of *Lecture Notes in Computer Science*, pages 2–3. Springer, 2007.
19. Franck Cassez, Thomas Chatain, and Claude Jard. Symbolic unfoldings for networks of timed automata. In Graf and Zhang [50], pages 307–321.
20. Thomas Chatain and Claude Jard. Symbolic diagnosis of partially observable concurrent systems. In David de Frutos-Escrig and Manuel Núñez, editors, *FORTE*, volume 3235 of *Lecture Notes in Computer Science*, pages 326–342. Springer, 2004.
21. Thomas Chatain and Claude Jard. Time supervision of concurrent systems using symbolic unfoldings of time Petri nets. In Paul Pettersson and Wang Yi, editors, *FORMATS*, volume 3829 of *Lecture Notes in Computer Science*, pages 196–210. Springer, 2005.
22. Thomas Chatain and Claude Jard. Complete finite prefixes of symbolic unfoldings of safe time Petri nets. In Susanna Donatelli and P. S. Thiagarajan, editors, *ICATPN*, volume 4024 of *Lecture Notes in Computer Science*, pages 125–145. Springer, 2006.
23. Thomas Chatain and Victor Khomenko. On the well-foundedness of adequate orders used for construction of complete unfolding prefixes. *Information Processing Letters*, 104(4):129–136, 2007.
24. Edmund M. Clarke, Orna Grumberg, and Doron Peled. *Model Checking*. The MIT Press, 1st edition, 1999.
25. Jordi Cortadella, Michael Kishinevsky, Alex Kondratyev, Luciano Lavagno, and Alexandre Yakovlev, editors. *Logic Synthesis of Asynchronous Controllers and Interfaces*. Number 8 in Springer Series in Advanced Microelectronics. Springer, 2002.
26. Costas Courcoubetis, Moshe Y. Vardi, Pierre Wolper, and Mihalis Yannakakis. Memory-efficient algorithms for the verification of temporal properties. *Formal Methods in System Design*, 1(2/3):275–288, 1992.
27. Jean-Michel Couvreur. On-the-fly verification of linear temporal logic. In Jeannette M. Wing, Jim Woodcock, and Jim Davies, editors, *World Congress on Formal Methods*, volume 1708 of *Lecture Notes in Computer Science*, pages 253–271. Springer, 1999.

28. Jean-Michel Couvreur, Sébastien Grivet, and Denis Poitrenaud. Designing an LTL model-checker based on unfolding graphs. In Mogens Nielsen and Dan Simpson, editors, *Proc. of ICATPN 2000*, LNCS 1825. Springer, 2000.
29. Jean-Michel Couvreur, Sébastien Grivet, and Denis Poitrenaud. Unfolding of products of symmetrical Petri nets. In José Manuel Colom and Maciej Koutny, editors, *ICATPN*, volume 2075 of *Lecture Notes in Computer Science*, pages 121–143. Springer, 2001.
30. Jörg Desel and Wolfgang Reisig. Place/Transition Petri nets. In Reisig and Rozenberg [106], pages 122–173.
31. Volker Diekert and Grzegorz Rozenberg, editors. *The Book of Traces*. World Scientific Publishing Co., Inc., 1995.
32. Joost Engelfriet. Branching processes of Petri nets. *Acta Informatica*, 28:575–591, 1991.
33. Javier Esparza. Model checking using net unfoldings. *Science of Computer Programming*, 23:151–195, 1994.
34. Javier Esparza. Decidability and complexity of Petri net problems - An introduction. In Reisig and Rozenberg [106], pages 374–428.
35. Javier Esparza and Keijo Heljanko. A new unfolding approach to LTL model checking. In Ugo Montanari, José D. P. Rolim, and Emo Welzl, editors, *ICALP*, volume 1853 of *Lecture Notes in Computer Science*, pages 475–486. Springer, 2000.
36. Javier Esparza and Keijo Heljanko. A new unfolding approach to LTL model checking. Series A: Research Report 60, Helsinki University of Technology, Laboratory for Theoretical Computer Science, Espoo, Finland, April 2000.
37. Javier Esparza and Keijo Heljanko. Implementing LTL model checking with net unfoldings. In Matthew B. Dwyer, editor, *SPIN*, volume 2057 of *Lecture Notes in Computer Science*, pages 37–56. Springer, 2001.
38. Javier Esparza, Pradeep Kanade, and Stefan Schwoon. A note on depth-first unfoldings. *International Journal on Software Tools for Technology Transfer (STTT)*, 2007. To appear, Online First DOI 10.1007/s10009-007-0030-5.
39. Javier Esparza and Stefan Römer. An unfolding algorithm for synchronous products of transition systems. In Jos C. M. Baeten and Sjouke Mauw, editors, *CONCUR*, volume 1664 of *Lecture Notes in Computer Science*, pages 2–20. Springer, 1999.
40. Javier Esparza, Stefan Römer, and Walter Vogler. An improvement of McMillan’s unfolding algorithm. In Tiziana Margaria and Bernhard Steffen, editors, *TACAS*, volume 1055 of *Lecture Notes in Computer Science*, pages 87–106. Springer, 1996.
41. Javier Esparza, Stefan Römer, and Walter Vogler. An improvement of McMillan’s unfolding algorithm. *Formal Methods in System Design*, 20(3):285–310, 2002.
42. Javier Esparza and Claus Schröter. Reachability analysis using net unfoldings. In *Proceeding of the Workshop Concurrency, Specification & Programming 2000, volume II of Informatik-Bericht 140*, pages 255–270. Humboldt-Universität zu Berlin, 2000.
43. Hans Fleischhack and Christian Stehno. Computing a finite prefix of a time Petri net. In Javier Esparza and Charles Lakos, editors, *ICATPN*, volume 2360 of *Lecture Notes in Computer Science*, pages 163–181. Springer, 2002.

44. Paul Gastin and Denis Oddoux. Fast LTL to Büchi automata translation. In Gérard Berry, Hubert Comon, and Alain Finkel, editors, *CAV*, volume 2102 of *Lecture Notes in Computer Science*, pages 53–65. Springer, 2001.
45. Jaco Geldenhuys and Antti Valmari. More efficient on-the-fly LTL verification with Tarjan’s algorithm. *Theoretical Computer Science*, 345(1):60–82, 2005.
46. Rob Gerth, Doron Peled, Moshe Y. Vardi, and Pierre Wolper. Simple on-the-fly automatic verification of linear temporal logic. In Piotr Dembinski and Marek Sredniawa, editors, *PSTV*, volume 38 of *IFIP Conference Proceedings*, pages 3–18. Chapman & Hall, 1995.
47. Patrice Godefroid. *Partial-Order Methods for the Verification of Concurrent Systems – An Approach to the State-Explosion Problem*. Springer, 1996. Volume 1032 of *Lecture Notes in Computer Science*.
48. Patrice Godefroid and Pierre Wolper. Using partial orders for the efficient verification of deadlock freedom and safety properties. *Formal Methods in System Design*, 2(2):149–164, 1993.
49. Ursula Goltz and Wolfgang Reisig. The non-sequential behaviour of Petri nets. *Information and Control*, 57(2/3):125–147, 1983.
50. Susanne Graf and Wenhui Zhang, editors. *Automated Technology for Verification and Analysis, 4th International Symposium, ATVA 2006, Beijing, China, October 23-26, 2006*, volume 4218 of *Lecture Notes in Computer Science*. Springer, 2006.
51. Bernd Grahmann. The PEP tool. In Grumberg [53], pages 440–443.
52. Burkhard Graves. Computing reachability properties hidden in finite net unfoldings. In S. Ramesh and G. Sivakumar, editors, *FSTTCS*, volume 1346 of *Lecture Notes in Computer Science*, pages 327–341. Springer, 1997.
53. Orna Grumberg, editor. *Computer Aided Verification, 9th International Conference, CAV ’97, Haifa, Israel, June 22-25, 1997, Proceedings*, volume 1254 of *Lecture Notes in Computer Science*. Springer, 1997.
54. Henri Hansen. *Alternatives to Büchi automata*. PhD thesis, Tampere University of Technology, Department of Information Technology, Tampere, Finland, 2007.
55. Henri Hansen, Wojciech Penczek, and Antti Valmari. Stuttering-insensitive automata for on-the-fly detection of livelock properties. *Electronic Notes in Theoretical Computer Science*, 66(2), 2002.
56. Keijo Heljanko. *Deadlock and Reachability Checking with Finite Complete Prefixes*. Licentiate’s thesis, Helsinki University of Technology, Department of Computer Science and Engineering, 1999. Also available as: Series A: Research Report 56, Helsinki University of Technology, Department of Computer Science and Engineering, Laboratory for Theoretical Computer Science.
57. Keijo Heljanko. Minimizing finite complete prefixes. In Hans-Dieter Burkhard, Ludwik Czaja, Sinh Hoa Nguyen, and Peter Starke, editors, *Proceedings of the Workshop Concurrency, Specification & Programming 1999*, pages 83–95, Warsaw, Poland, September 1999. Warsaw University.
58. Keijo Heljanko. Using logic programs with stable model semantics to solve deadlock and reachability problems for 1-safe Petri nets. *Fundamenta Informaticae*, 37(3):247–268, 1999.
59. Keijo Heljanko. Model checking with finite complete prefixes is PSPACE-complete. In Palamidessi [97], pages 108–122.

60. Keijo Heljanko. *Combining Symbolic and Partial Order Methods for Model Checking 1-Safe Petri Nets*. Doctoral thesis, Helsinki University of Technology, Department of Computer Science and Engineering, 2002. Also available as: Series A: Research Report 71, Helsinki University of Technology, Department of Computer Science and Engineering, Laboratory for Theoretical Computer Science.
61. Keijo Heljanko, Victor Khomenko, and Maciej Koutny. Parallelisation of the Petri net unfolding algorithm. In Joost-Pieter Katoen and Perdita Stevens, editors, *TACAS*, volume 2280 of *Lecture Notes in Computer Science*, pages 371–385. Springer, 2002.
62. Juhana Helovuo and Antti Valmari. Checking for CFFD-preorder with tester processes. In Susanne Graf and Michael I. Schwartzbach, editors, *TACAS*, volume 1785 of *Lecture Notes in Computer Science*, pages 283–298. Springer, 2000.
63. Graham Higman. Ordering by divisibility in abstract algebras. *Proceedings of the London Mathematical Society*, 3(2):326–336, 1952.
64. C. A. R. Hoare. *Communicating Sequential Processes*. Prentice Hall, 1985.
65. Gerard J. Holzmann. *The Spin Model Checker: Primer and Reference Manual*. Addison-Wesley, 2003.
66. Gerard J. Holzmann, Doron A. Peled, and Mihalis Yannakakis. On nested depth first search. In *2nd SPIN Workshop*, pages 23–32, 1996.
67. Ryszard Janicki and Maciej Koutny. Semantics of inhibitor nets. *Information and Computation*, 123(1):1–16, 1995.
68. Kurt Jensen. *Coloured Petri Nets. Basic Concepts, Analysis Methods and Practical Use, Volumes I-III*. EATCS Monographs in Theoretical Computer Science. Springer, 1997.
69. Victor Khomenko. *Model Checking Based on Prefixes of Petri Net Unfoldings*. PhD thesis, School of Computing Science, Newcastle University, 2003. British Lending Library DSC stock location number: DXN061636.
70. Victor Khomenko and Maciej Koutny. LP deadlock checking using partial order dependencies. In Palamidessi [97], pages 410–425.
71. Victor Khomenko and Maciej Koutny. Towards an efficient algorithm for unfolding Petri nets. In Larsen and Nielsen [81], pages 366–380.
72. Victor Khomenko and Maciej Koutny. Branching processes of high-level Petri nets. In Hubert Garavel and John Hatcliff, editors, *TACAS*, volume 2619 of *Lecture Notes in Computer Science*, pages 458–472. Springer, 2003.
73. Victor Khomenko, Maciej Koutny, and Walter Vogler. Canonical prefixes of Petri net unfoldings. *Acta Informatica*, 40(2):95–118, 2003.
74. Victor Khomenko, Maciej Koutny, and Alexandre Yakovlev. Detecting state encoding conflicts in STG unfoldings using SAT. *Fundamenta Informaticae*, 62(2):221–241, 2004.
75. Victor Khomenko, Maciej Koutny, and Alexandre Yakovlev. Logic synthesis for asynchronous circuits based on STG unfoldings and incremental SAT. *Fundamenta Informaticae*, 70(1-2):49–73, 2006.
76. Victor Khomenko, Agnes Madalinski, and Alexandre Yakovlev. Resolution of encoding conflicts by signal insertion and concurrency reduction based on STG unfoldings. In *ACSD*, pages 57–68. IEEE Computer Society, 2006.
77. H. C. M. Kleijn and Maciej Koutny. Process semantics of general inhibitor nets. *Information and Computation*, 190(1):18–69, 2004.

78. Barbara König and Vitali Kozioura. AUGUR - A tool for the analysis of graph transformation systems. *Bulletin of the EATCS*, 87:126–137, 2005.
79. Leslie Lamport. What good is temporal logic? In R. E. A. Mason, editor, *Information Processing 83*, pages 657–668. Elsevier, 1983.
80. Rom Langerak and Ed Brinksma. A complete finite prefix for process algebra. In Nicolas Halbwachs and Doron Peled, editors, *CAV*, volume 1633 of *Lecture Notes in Computer Science*, pages 184–195. Springer, 1999.
81. Kim Guldstrand Larsen and Mogens Nielsen, editors. *CONCUR 2001 - Concurrency Theory, 12th International Conference, Aalborg, Denmark, August 20-25, 2001, Proceedings*, volume 2154 of *Lecture Notes in Computer Science*. Springer, 2001.
82. Timo Latvala and Heikki Tauriainen. Improved on-the-fly verification with testers. *Nordic Journal of Computing*, 11(2):148–164, 2004.
83. Yu Lei and S. Purushothaman Iyer. An approach to unfolding asynchronous communication protocols. In John Fitzgerald, Ian J. Hayes, and Andrzej Tarlecki, editors, *FM*, volume 3582 of *Lecture Notes in Computer Science*, pages 334–349. Springer, 2005.
84. Kenneth L. McMillan. Using unfoldings to avoid the state explosion problem in the verification of asynchronous circuits. In Gregor von Bochmann and David K. Probst, editors, *CAV*, volume 663 of *Lecture Notes in Computer Science*, pages 164–177. Springer, 1992.
85. Kenneth L. McMillan. *Symbolic Model Checking*. Kluwer Academic Publishers, 1993.
86. Kenneth L. McMillan. A technique of state space search based on unfolding. *Formal Methods in System Design*, 6(1):45–65, 1995.
87. Kenneth L. McMillan. Trace theoretic verification of asynchronous circuits using unfoldings. In Pierre Wolper, editor, *CAV*, volume 939 of *Lecture Notes in Computer Science*, pages 180–195. Springer, 1995.
88. Stephan Melzer and Stefan Römer. Deadlock checking using net unfoldings. In Grumberg [53], pages 352–363.
89. Stephan Melzer, Stefan Römer, and Javier Esparza. Verification using PEP. In Martin Wirsing and Maurice Nivat, editors, *AMAST*, volume 1101 of *Lecture Notes in Computer Science*, pages 591–594. Springer, 1996.
90. Robin Milner. *Communication and Concurrency*. Prentice Hall, 1989.
91. Peter Niebert, Michaela Huhn, Sarah Zennou, and Denis Lugiez. Local first search - A new paradigm for partial order reductions. In Larsen and Nielsen [81], pages 396–410.
92. Peter Niebert and Hongyang Qu. The implementation of Mazurkiewicz traces in POEM. In Graf and Zhang [50], pages 508–522.
93. Mogens Nielsen, Gordon D. Plotkin, and Glynn Winskel. Petri nets, event structures and domains. *Theoretical Computer Science*, 13(1):85–108, 1981.
94. Mogens Nielsen, Grzegorz Rozenberg, and P. S. Thiagarajan. Behavioural notions for elementary net systems. *Distributed Computing*, 4:45–57, 1990.
95. Mogens Nielsen, Grzegorz Rozenberg, and P. S. Thiagarajan. Transition systems, event structures and unfoldings. *Information and Computation*, 118(2):191–207, 1995.
96. Ilkka Niemelä and Patrik Simons. Smodels - An implementation of the stable model and well-founded semantics for normal logic programs. In Jürgen Dix, Ulrich Furbach, and Anil Nerode, editors, *LPNMR*, volume 1265 of *Lecture Notes in Computer Science*, pages 421–430. Springer, 1997.

97. Catuscia Palamidessi, editor. *CONCUR 2000 - Concurrency Theory, 11th International Conference, University Park, PA, USA, August 22-25, 2000, Proceedings*, volume 1877 of *Lecture Notes in Computer Science*. Springer, 2000.
98. Christos H. Papadimitriou. *Computational Complexity*. Addison-Wesley, 1994.
99. Doron Peled. Combining partial order reductions with on-the-fly model-checking. *Formal Methods in System Design*, 8(1):39–64, 1996.
100. Doron Peled and Thomas Wilke. Stutter-invariant temporal properties are expressible without the next-time operator. *Inf. Process. Lett.*, 63(5):243–246, 1997.
101. Carl Adam Petri. *Kommunikation mit Automaten*. Bonn: Institut für Instrumentelle Mathematik, Schriften des IIM Nr. 2, 1962.
102. Carl Adam Petri. Kommunikation mit automaten. *New York: Griffiss Air Force Base, Technical Report RADC-TR-65-377*, 1:1-Suppl. 1, 1966. English translation.
103. Carl Adam Petri. Non-sequential processes. Technical Report ISF-77-5, Gesellschaft für Mathematik und Datenverarbeitung, 1977.
104. Amir Pnueli. The temporal logic of programs. In *FOCS*, pages 46–57. IEEE, 1977.
105. Arthur Prior. *Past, Present and Future*. Oxford: Clarendon Press, 1967.
106. Wolfgang Reisig and Grzegorz Rozenberg, editors. *Lectures on Petri Nets I: Basic Models, Advances in Petri Nets, the volumes are based on the Advanced Course on Petri Nets, held in Dagstuhl, September 1996*, volume 1491 of *Lecture Notes in Computer Science*. Springer, 1998.
107. Stefan Römer. *Theorie und Praxis der Netzentfaltungen als Basis für die Verifikation nebenläufiger Systeme*. PhD thesis, Technische Universität München, Fakultät für Informatik, München, Germany, 2000.
108. Grzegorz Rozenberg and Joost Engelfriet. Elementary net systems. In Reisig and Rozenberg [106], pages 12–121.
109. Claus Schröter. *Halbordnungs- und Reduktionstechniken für die automatische Verifikation von verteilten Systemen*. PhD thesis, Universität Stuttgart, 2006.
110. Claus Schröter and Victor Khomenko. Parallel LTL-X model checking of high-level Petri nets based on unfoldings. In Rajeev Alur and Doron Peled, editors, *CAV*, volume 3114 of *Lecture Notes in Computer Science*, pages 109–121. Springer, 2004.
111. Claus Schröter, Stefan Schwoon, and Javier Esparza. The model-checking kit. In Wil M. P. van der Aalst and Eike Best, editors, *ICATPN*, volume 2679 of *Lecture Notes in Computer Science*, pages 463–472. Springer, 2003.
112. Stefan Schwoon and Javier Esparza. A note on on-the-fly verification algorithms. In Nicolas Halbwachs and Lenore D. Zuck, editors, *TACAS*, volume 3440 of *Lecture Notes in Computer Science*, pages 174–190. Springer, 2005.
113. Colin Stirling and David Walker. Local model checking in the modal mu-calculus. *Theoretical Computer Science*, 89(1):161–177, 1991.
114. Robert E. Tarjan. Depth-first search and linear graph algorithms. *SIAM Journal of Computing*, 1(2):146–160, 1972.
115. Antti Valmari. Stubborn sets for reduced state space generation. In Grzegorz Rozenberg, editor, *Applications and Theory of Petri Nets*, volume 483 of *Lecture Notes in Computer Science*, pages 491–515. Springer, 1989.
116. Antti Valmari. A stubborn attack on state explosion. In Edmund M. Clarke and Robert P. Kurshan, editors, *CAV*, volume 531 of *Lecture Notes in Computer Science*, pages 156–165. Springer, 1990.

117. Antti Valmari. On-the-fly verification with stubborn sets. In Costas Courcoubetis, editor, *CAV*, volume 697 of *Lecture Notes in Computer Science*, pages 397–408. Springer, 1993.
118. Antti Valmari. The state explosion problem. In Reisig and Rozenberg [106], pages 429–528.
119. Moshe Y. Vardi and Pierre Wolper. An automata-theoretic approach to automatic program verification (preliminary report). In *LICS*, pages 332–344. IEEE Computer Society, 1986.
120. Moshe Y. Vardi and Pierre Wolper. Reasoning about infinite computations. *Information and Computation*, 115(1):1–37, 1994.
121. Walter Vogler, Alexei L. Semenov, and Alexandre Yakovlev. Unfolding and finite prefix for nets with read arcs. In Davide Sangiorgi and Robert de Simone, editors, *CONCUR*, volume 1466 of *Lecture Notes in Computer Science*, pages 501–516. Springer, 1998.
122. Frank Wallner. Model checking LTL using net unfoldings. In Alan J. Hu and Moshe Y. Vardi, editors, *CAV*, volume 1427 of *Lecture Notes in Computer Science*, pages 207–218. Springer, 1998.
123. Glynn Winskel. Event structures. In Wilfried Brauer, Wolfgang Reisig, and Grzegorz Rozenberg, editors, *Advances in Petri Nets*, volume 255 of *Lecture Notes in Computer Science*, pages 325–392. Springer, 1986.
124. Glynn Winskel. An introduction to event structures. In J. W. de Bakker, Willem P. de Roever, and Grzegorz Rozenberg, editors, *REX Workshop*, volume 354 of *Lecture Notes in Computer Science*, pages 364–397. Springer, 1988.
125. Pierre Wolper and Patrice Godefroid. Partial-order methods for temporal verification. In Eike Best, editor, *CONCUR*, volume 715 of *Lecture Notes in Computer Science*, pages 233–246. Springer, 1993.

Index

- ψ -history, 128, 132
- i*-event, 22, 117
- i*-place, 22
- i*-root, 22
- 1-equivalent, 51

- Abdulla, 154
- accepting state, 129, 134
- action, 12
- adequate order, 62
- adequate search strategies, 59
- adequate strategy, 120
- ample sets, 38
- applications, 153
- Arnold, 2, 12
- Artho, 123
- asynchronous circuit, 153
- atom, 131
- atomic proposition, 126
- Aura, 155

- Büchi automaton, 130, 148, 151
- Büchi tester, 125, 129, 130
- Barnat, 106
- Benveniste, 153
- Best, 37, 156
- Biere, 123
- Bonet, 68, 72
- bounded Petri net, 154
- Bouyer, 155
- Bradfield, 39
- branching processes, 16, 38
- breadth-first, 33, 86
- Brim, 106

- canonical name, 18, 19
- canonical prefix, 71
- Cassez, 155
- causal net, 37
- causal order, 43
- causal predecessor, 23, 42
- causality, 23
- causally closed, 25
- causally related, 23
- CCS, 2, 12
- Chatain, 62, 91, 95, 155
- closure, 131
- CLP, 156
- CNF-3SAT, 31
- colored net, 155
- companion, 43, 97, 114, 118
- complete prefix, 73
- completeness
 - executability
 - product, 62
 - transition system, 46
 - livelock
 - product, 120, 121
 - transition system, 112
 - repeated executability
 - product, 103
 - transition system, 98
- component, 6
- computation, 5
- computation tree, 13
- concurrency, 23
- concurrent, 23
- configuration, 25

- conflict, 23
- conflict-free, 25
- counterexample
 - generalizing executability, 58
- Courcoubetis, 100, 105
- Couvreur, 105
- CSP, 2, 12

- d-unfolding, 108, 117, 120
- depth-first, 33, 86
- Devillers, 37
- diagnosis, 153
- discrete event system, 153
- distributed strategy, 64, 65
- duplicate, 117
- duplicate event, 108

- elementary net system, 12, 37
- enabling, 5, 7, 8
- Engelfriet, 37
- equivalent, 51
- Esparza, 38, 94, 95, 105
- event
 - type 0, 109, 118
 - type 1, 109, 118
 - type 2, 109, 118
- events, 16
- executability problem, 36, 41
 - product, 48
 - transition system, 41
- extensions, 154

- feasible event, 43, 97, 102, 109, 118
- Fernández, 37
- final prefix, 109, 116, 118, 146
- finiteness
 - executability
 - product, 57
 - transition system, 45
 - livelock
 - product, 118
 - transition system, 110
 - repeated executability
 - product, 105
 - transition system, 98
- firing, 8
- Fleischhack, 155
- flow relation, 8
- Foata normal form, 95

- full synchronization, 136

- Geldenhuys, 105
- generalized Büchi tester, 130, 134
- global computation, 7
- global history, 127
- global reachability problem, 78
- global state, 6
- global transition, 6
- global transition word, 7
- goal transition, 41
- Goltz, 37
- Grahlmann, 156
- Graves, 149

- Haddad, 155
- Hansen, 123
- Haslum, 68, 72
- Heljanko, 38, 39, 78, 94, 106, 156
- Helovuo, 123
- Hickmott, 68, 72
- high-level Petri net, 155
- Higman's lemma, 92
- Hintikka sequence, 130, 132, 133
- history, 5, 42, 54
- Holzmann, 105
- Huhn, 38

- independence, 50
- independence relation, 51
- infinite computation, 5
- infinite global computation, 7
- infinite history, 6
- infinite word, 126
- inhibitor arcs, 38
- initial marking, 8
- initial state, 5
- input node, 8
- insensitive to stuttering, 139
- instrumentation, 143
- interleaving representation, 10
- interleaving semantics, 10
- interpreting LTL, 126
- invisible, 36
- invisible transition, 107, 115

- Jard, 153, 155
- Jensen, 155

- Kanade, 95

- Khomenko, 38, 71, 94, 95, 153, 155, 156
- Koutny, 38, 71, 94, 153
- label, 18
- labeled Petri net, 14
- labeled transition system, 13
- labeling function, 129
- Lamport, 139, 148
- language, 130
- lexicographic order, 48
- lexicographic strategy, 65
- Lilius, 155
- linear temporal logic, 125, 126, 151
- livelock, 107, 116
 - good, 120
 - transition system, 107
- livelock mode, 108
- livelock monitor, 107, 115
- livelock problem, 36, 107, 129, 143
 - product, 115
- livelock strategy, 114
- livelock's root, 107
- local configuration, 53
- LTL, 125, 126, 144, 151
- LTL model checking, 1, 115
- LTL property, 125
- LTL tester, 129
- LTL-X, 139, 149, 156
- Lugiez, 38
- main mode, 108
- marking, 8
- Mazurkiewicz, 50, 72
- Mazurkiewicz trace, 50, 64, 72
- McMillan, 1, 38, 72, 94
- Melzer, 94
- minimal witness, 47, 114, 122
- mode of operation, 115
- model checking, 3, 144
- model checking LTL, 125, 144
- model checking problem, 127
- Mole, 156
- monitoring, 153
- nested-depth-first search, 101
- net, 8
- networks of timed automata, 155
- Niebert, 38, 82, 94
- Nielsen, 37
- node, 8
- non-stuttering projection, 140
- non-stuttering transition, 140
- nondeterministic program, 108, 115
- nonsequential processes, 37
- NP, 30
- numbering, 16
- Nylén, 154
- occurrence, 13
- occurrence net, 37
- occurrence sequence, 9
- occurring, 8
- order, 41
 - partial order, 41
 - strict partial order, 41
- orders, 42
- output node, 8
- Parikh, 63, 94
- Parikh mapping, 64
- Parikh strategy, 63
- Parikh-lexicographic strategy, 82
- partial order, 41
- partial run, 37
- partial-order reduction, 38
- past, 53
- Peled, 105
- Penczek, 123
- PEP, 156
- Petri, 12
- Petri net, 8
- Petri net representation, 8, 9
- Petri net unfold, 156
- place, 8
- Plotkin, 37
- Pnueli, 147
- possible extension, 29
- pre-witness, 121
- prefix, 19
- prefix order, 65
- preserved by extensions, 62, 66
- Prior, 147
- priority
 - livelock strategy, 114
- priority relation, 41
- product, 2, 6
- properties of branching processes, 22
- PUNF, 153, 156

- Purushothaman Iyer, 154
- Qu, 82, 94
- Römer, 38, 94, 156
- reachability, 9
- read arcs, 38, 154
- realization, 25
- recurrent infinite history, 141
- refined order, 42
- Reisig, 37
- repeated executability problem, 36, 97, 129, 137, 143
 - product, 101
 - transition system, 97
- Reynier, 155
- root event, 120
- Rozenberg, 37

- satisfaction relation, 126
- Savitch, 36
- Schröter, 38, 94, 155, 156
- Schuppan, 123
- Schwoon, 95, 105, 156
- search procedure, 3, 33, 152
- search scheme, 33, 41, 103, 110, 152
 - executability
 - product, 56
 - transition system, 43
 - livelock
 - product, 115
 - transition system, 107
 - repeated executability
 - product, 101
 - transition system, 97
- search strategy, 33, 41, 152
 - product, 48
 - transition system, 41
- semantics, 10
- semantics of LTL, 126
- Semenov, 154
- signal transition graph, 153
- size strategy, 63
- sleep sets, 38
- soundness
 - executability
 - product, 57
 - transition system, 46
 - livelock
- product, 118
- transition system, 112
- repeated executability
 - product, 102
 - transition system, 98
- Spin, 105, 153
- spoiler, 46
- state, 5
- state explosion problem, 1, 38
- state space, 3
- state space methods, 1
- state space reduction, 38
- Stehno, 155, 156
- step, 5, 7
- step of an unfolding, 19
- STG, 153
- Stirling, 39
- strict partial order, 41
- strongly connected component, 145
- stubborn sets, 38
- stutter-accepting, 142
- stutter-accepting state, 145
- stuttering, 138, 141
- stuttering equivalence, 138
- stuttering synchronization, 138, 140, 146
- stuttering transition, 139
- stuttering-invariant, 139
- stuttering-invariant formula, 140
- stuttering-invariant fragment, 139
- success condition, 34
- successful, 34
- successful terminal, 34, 97, 102, 109, 118
- synchronization, 151
- synchronization constraint, 6
- synchronization degree, 30
- synchronization vectors, 2
- synchronous product, 2, 5
- syntactic characterization, 132
- syntax of LTL, 126

- tableau systems, 39
- Tarjan, 105
- Tarjan's algorithm, 145
- terminal, 34
- terminal event, 43, 97, 102, 109, 118
- termination condition, 34
- tester, 123, 129, 148, 151

- the model checking kit, 156
- the unfolding, 19
- Thiagarajan, 37
- Thiébaux, 68, 72
- time Petri net, 155
- token, 8
- tools, 156
- total adequate strategy, 64
- total livelock strategy, 114, 122
- total order, 48
- total search strategy, 58
- trace, 51
- transition, 5, 8
- transition system, 5
- transition word, 5
- true-concurrency, 1

- unbounded Petri nets, 154
- unfold, 156
- unfolding, 13
- unfolding a product, 28
- unfolding a transition system, 21
- unfolding method, 1
- unfolding procedure, 34
- unfolding products, 13
- Unfsmodels, 156

- Valmari, 105, 123, 148
- Vardi, 100, 105, 125, 148
- verification, 3
- verification using unfoldings, 26

- visibility constraint, 115, 119, 120, 145
- visible, 36
- visible event, 109
- visible transition, 107, 115
- Vogler, 38, 71, 154

- Walker, 39
- Wallner, 149
- well-defined, 63
 - executability
 - product, 57
 - transition system, 45
 - livelock
 - product, 118
 - transition system, 110
 - repeated executability
 - product, 102
 - transition system, 98
- well-founded, 91
- well-founded order, 62
- well-quasi-order, 92
- Winkel, 37
- witness, 46, 98, 103, 112, 121
- Wolper, 100, 105, 125, 148
- word, 5

- Yakovlev, 153, 154
- Yannakakis, 100, 105

- Zennou, 38