

Bibliography

- [1] A. V. Aho, R. Sethi, J. D. Ullman, *Compilers: principles, techniques, and tools*, Addison-Wesley, 1986.
- [2] A. V. Aho, Algorithms for finding patterns in strings, in *Algorithms and complexity, Volume A* (editor J. van Leeuwen), Elsevier, 1992, 257–300.
- [3] J. Almeida, *Finite semigroups and universal algebra*, World Scientific, 1994.
- [4] D. Angluin, Inference of reversible languages, *Journal of the Association for Computing Machinery* **29** (1982), 741–765.
- [5] M. A. Arbib (editor), *Algebraic theory of machines, languages, and semigroups*, Academic Press, 1968.
- [6] M. A. Arbib, *Brains, machines and mathematics*, Springer-Verlag, 1987.
- [7] D. N. Arden, Delayed-logic and finite-state machines, in *Theory of computing machine design*, University of Michigan Press, Ann Arbor, Michigan, 1960, 1–35.
- [8] R. A. Baeza-Yates, Searching subsequences, *Theoretical Computer Science* **78** (1991), 363–376.
- [9] V. Bar-Hillel, M. Perles, E. Shamir, On formal properties of simple phrase structure grammars, *Zeitschrift für Phonetik, Sprachwissenschaft, und Kommunikationsforschung* **14** (1961), 143–172.
- [10] M. P. Béal, D. Perrin, Symbolic dynamics and finite automata, in *Handbook of formal languages, Volume 2* (editors G. Rozenberg, A. Salomaa), Springer, 1997, 463–506.
- [11] G. Berry, R. Sethi, From regular expressions to deterministic automata, *Theoretical Computer Science* **48** (1986), 117–126.
- [12] J. Berstel, *Transductions and context-free languages*, B.G. Teubner Stuttgart, 1979.

- [13] J. Berstel, J.-E. Pin, Local languages and the Berry-Sethi algorithm, *Theoretical Computer Science* **155** (1996), 439–446.
- [14] J. Berstel, C. Reutenauer, *Rational series and their languages*, Springer-Verlag, 1988.
- [15] M. J. J. Branco, Varieties of languages, in *Semigroups, algorithms, automata and languages* (editors G. M. S. Gomes, J.-E. Pin, P. V. Silva), World Scientific, 2002, 91–132.
- [16] W. Brauer, *Automatentheorie*, B.G. Teubner, Stuttgart, 1984.
- [17] A. Brüggemann-Klein, Regular expressions into finite automata, *Lecture Notes in Computer Science* **583** (1992), 87–98.
- [18] J. A. Brzozowski, Canonical regular expressions and minimal state graphs for definite events, in *Mathematical theory of automata*, Polytechnic Press of the Polytechnic Institute of Brooklyn, Brooklyn, New York, 1962, 529–561.
- [19] J. A. Brzozowski, Derivatives of regular expressions, *Journal of the Association for Computing Machinery* **11** (1964), 481–494.
- [20] J. A. Brzozowski, E. J. McCluskey, Signal flow graph techniques for sequential circuit state diagrams, *IEEE Transactions on Electronic Computers*, **12** (1963), 67–76.
- [21] J. A. Brzozowski, I. Simon, Characterization of locally testable events, *Discrete Mathematics* **4** (1973), 243–271.
- [22] J. R. Büchi, *Finite automata, their algebras and grammars* (editor D. Siefkes), Springer-Verlag, 1989.
- [23] J. Carroll, D. Long, *Theory of finite automata*, Prentice-Hall International, 1989.
- [24] J.-M. Champarnaud, J.-E. Pin, A maxmin problem on finite automata, *Discrete Applied Mathematics* **23** (1989), 91–96.
- [25] C. Choffrut, Minimizing subsequential transducers: a survey, *Theoretical Computer Science* **292** (2003), 131–143.
- [26] S. Choi, D. T. Huynh, Finite automaton aperiodicity is PSPACE-complete, *Theoretical Computer Science* **88** (1991), 99–116.
- [27] N. Chomsky, Three models for the description of languages, *IRE Transactions on Information Theory* **2** (1956), 113–124.
- [28] N. Chomsky, *Syntactic structures*, Mouton, 1975.

- [29] N. Chomsky, G. A. Miller, Finite state languages, *Information and Control* **1** (1958), 91–112.
- [30] N. Chomsky, M. P. Schützenberger, The algebraic theory of context-free languages, in *Computer programming and formal systems* (editors P. Brafford, E. Hirschberg), North-Holland, Amsterdam, 1963, 118–161.
- [31] P. S. Churchland, *Neurophilosophy*, The MIT Press, 1990.
- [32] A. H. Clifford, G. B. Preston, *The algebraic theory of semigroups*, vol. I, American Mathematical Society, Providence, R.I., 1961.
- [33] A. H. Clifford, G. B. Preston, *The algebraic theory of semigroups*, vol. II, American Mathematical Society, Providence, R.I., 1967.
- [34] D. I. A. Cohen, *Introduction to computer theory*, Second Edition, John Wiley and Sons, 1997.
- [35] J. H. Conway, *Regular algebra and finite machines*, Chapman and Hall, 1971.
- [36] T. H. Cormen, C. E. Leiserson, R. L. Rivest, *Introduction to algorithms*, The MIT Press, 1990.
- [37] M. Chrochemore, C. Hancart, Automata for matching patterns, in *Handbook of formal languages, Volume 2* (editors G. Rozenberg, A. Salomaa), Springer, 1997, 399–462.
- [38] K. Culik II, J. Kari, Digital images and formal languages, in *Handbook of formal languages, Volume 3* (editors G. Rozenberg, A. Salomaa), Springer, 1997, 599–616.
- [39] S. Eilenberg, *Automata, languages and machines, Volume A*, Academic Press, 1974.
- [40] S. Eilenberg, *Automata, languages and machines, Volume B*, Academic Press, 1976.
- [41] S. Eilenberg, M. P. Schützenberger, On pseudovarieties, *Advances in Mathematics* **19** (1976), 413–418.
- [42] T. S. Eliot, *Four quartets*, Faber Paperbacks, 1976.
- [43] D. B. A. Epstein, J. W. Cannon, D. F. Holt, S. V. F. Levy, M. S. Patterson, W. P. Thurston, *Word processing in groups*, Jones and Bartlett, 1992.
- [44] R. W. Floyd, R. Beigel, *The language of machines*, Computer Science Press, 1994.

- [45] J. Fountain (editor), *Semigroups, formal languages and groups*, Kluwer Academic Publishers, 1995.
- [46] J. B. Fraleigh, *A first course in abstract algebra*, Fifth Edition, Addison-Wesley, 1994.
- [47] J. E. F. Friedl, *Mastering regular expressions*, Second Edition, O'Reilly, 2002.
- [48] R. Fröberg, C. Gottlieb, R. Häggkvist, On numerical semigroups, *Semigroup Forum* **35** (1987), 63–83.
- [49] W. H. Gardner, *Poems and prose of Gerard Manley Hopkins*, Penguin Books, 1978.
- [50] F. Gécseg, I. Peák, *Algebraic theory of automata*, Akadémiai Kiadó, Budapest, 1972.
- [51] R. H. Gilman, Formal languages and infinite groups, *DIMACS Series in Discrete Mathematics and Theoretical Computer Science* **25** (1996), 27–51.
- [52] D. Giammarresi, A. Restivo, Two-dimensional languages, in *Handbook of formal languages, Volume 3* (editors G. Rozenberg, A. Salomaa), Springer, 1997, 215–267.
- [53] S. Ginsburg, G. F. Rose, Operations which preserve definability in languages, *Journal of the Association for Computing Machinery* **10** (1963), 175–195.
- [54] A. Ginzburg, *Algebraic theory of automata*, Academic Press, 1968.
- [55] V. M. Glushkov, The abstract theory of automata, *Russian Mathematical Surveys* **16** (1961), 1–53.
- [56] G. M. S. Gomes, J.-E. Pin, P. V. Silva, *Semigroups, algorithms, automata and languages*, World Scientific, 2002.
- [57] R. I. Gogorshuk, V. V. Nekrashevich, V. I. Sushchanskii, Automata, dynamical systems, and groups, *Proceedings of the Steklov Institute of Mathematics* **231** (2000), 128–203.
- [58] F. von Haeseler, *Automatic sequences*, Walter de Gruyter, 2003.
- [59] P. R. Halmos, *Naive set theory*, Springer-Verlag, 2001.
- [60] J. Hartmanis, R. E. Stearns, Sets of numbers defined by finite automata, *American Mathematical Monthly* **74** (1967), 539–542.
- [61] P. M. Higgins, A proof of Simon's theorem on piecewise testable languages, *Theoretical Computer Science* **178** (1997), 257–264.

- [62] P. M. Higgins, A new proof of Schützenberger's theorem, *International Journal of Algebra and Computation* **10** (2000), 217–220.
- [63] A. Hodges, *Alan Turing: the enigma*, Vintage, 1992.
- [64] J. E. Hopcroft, An $n \log n$ algorithm for minimising the states in a finite automaton, in *Theory of machines and computations* (editor Z. Kohavi), New York, Academic Press, 1971, 189–196.
- [65] J. E. Hopcroft, J. D. Ullman, *Introduction to automata theory, languages and computation*, Addison-Wesley, 1979.
- [66] J. E. Hopcroft, R. Motwani, J. D. Ullman, *Introduction to automata theory, languages and computation*, Second Edition, Addison Wesley, 2001.
- [67] J. M. Howie, *Automata and languages*, Clarendon Press, Oxford, 1991.
- [68] J. M. Howie, *Fundamentals of semigroup theory*, Clarendon Press, Oxford, 1995.
- [69] D. A. Huffman, The synthesis of sequential switching circuits, *Journal of the Franklin Institute* **257** (1954), 161–190, 275–303.
- [70] Th. Ihringer, *Allgemeine Algebra*, B. G. Teubner, Stuttgart, 1988.
- [71] R. Johnsonbaugh, *Discrete mathematics*, Fifth Edition, Prentice Hall, 2001.
- [72] D. Jurafsky, J. H. Martin, *Speech and language processing*, Prentice Hall, 2000.
- [73] A. J. Kfoury, R. N. Moll, M. A. Arbib, *A programming approach to computability*, Springer-Verlag, 1982.
- [74] S. C. Kleene, Representation of events in nerve nets and finite automata, in *Automata studies* (editors C. E. Shannon, J. McCarthy), Princeton University Press, 1956, 3–42.
- [75] D. C. Kozen, *Automata and computability*, Springer-Verlag, 1997.
- [76] K. Krohn, J. Rhodes, The algebraic theory of machines I, *Transactions of the American Mathematical Society* **116** (1965), 450–464.
- [77] G. Lallement, *Semigroups and combinatorial applications*, John Wiley and Sons, 1979.
- [78] M. V. Lawson, *Inverse semigroups*, World Scientific, 1998.
- [79] D. Lewin, D. Protheroe, *Design of logic systems*, Chapman and Hall, 1994.

- [80] H. R. Lewis, C. H. Papadimitriou, *Elements of the theory of computation*, Second Edition, Addison Wesley Longman, 1998.
- [81] D. Lind, B. Marcus, *Symbolic dynamics and coding*, Cambridge University Press, 1995.
- [82] M. Lothaire, *Combinatorics on words*, Cambridge University Press, 1997.
- [83] S. W. Margolis, J.-E. Pin, Expansions, free inverse semigroups and Schützenberger product, *Journal of Algebra* **110** (1987), 298–305.
- [84] S. W. Margolis, J. C. Meakin, Free inverse monoids and graph immersions, *International Journal of Algebra and Computation* **3** (1993), 79–99.
- [85] W. S. McCulloch, W. Pitts, A logical calculus of the ideas immanent in nervous activity, *Bulletin of Mathematical Biophysics* **5** (1943), 115–133.
- [86] R. McNaughton, H. Yamada, Regular expressions and state graphs for automata, *IRE Transactions on Electronic Computers* **9** (1960), 39–47.
- [87] R. McNaughton, S. Papert, The syntactic monoid of a regular event, in *Algebraic theory of machines, languages and semigroups* (editor M. A. Arbib), Academic Press, 1968, 297–312.
- [88] R. McNaughton, S. Papert, *Counter-free automata*, MIT Press, Cambridge, 1971.
- [89] R. McNaughton, Algebraic decision procedures for local testability, *Mathematical Systems Theory* **8** (1974), 60–76.
- [90] G. H. Mealy, A method for synthesizing sequential circuits, *Bell System Technical Journal* **34** (1955), 1045–1079.
- [91] Yu. T. Medvedev, On the class of events representable in a finite automaton, 1956, in Russian, reprinted in English in [96].
- [92] B. Mikolajczak (editor), *Algebraic and structural automata theory*, North-Holland, 1991.
- [93] M. Minsky, *Computation: finite and infinite machines*, New York, Prentice-Hall, 1967.
- [94] R. Moll, M. A. Arbib, A. J. Kfoury, *An introduction to formal language theory*, Springer-Verlag, 1988.
- [95] E. F. Moore, Gedanken-Experiments on sequential machines, in *Automata studies* (editors C. E. Shannon, J. McCarthy), Princeton University Press, 1956, 129–153.
- [96] E. F. Moore (editor), *Sequential machines: selected papers*, Addison-Wesley, 1964.

- [97] J. Myhill, Finite automata and the representation of events, *Wright Air Development Command Technical Report 57-624*, (1957), 112–137.
- [98] A. Nerode, Linear automaton transformations, *Proceedings of the American Mathematical Society* **9** (1958), 541–544.
- [99] M. Perles, M. O. Rabin, E. Shamir, The theory of definite automata, *IEEE Transactions of Electronic Computing* **12** (1963), 233–243.
- [100] D. Perrin, Finite automata, in *Handbook of theoretical computer science* (editor J. van Leeuwen), Elsevier Science Publishers B.V., 1990, 3–57.
- [101] D. Perrin, Les débuts de la théorie des automates, *Technique et Science Informatique* **14** (1995), 409–433.
- [102] C. Petzold, *Codes*, Microsoft Press, 1999.
- [103] J.-E. Pin, *Varieties of formal languages*, North Oxford Academic, 1986.
- [104] J.-E. Pin, On reversible automata, in *Lecture Notes in Computer Science* **583**, Springer, 401–416.
- [105] J.-E. Pin, Finite semigroups and recognisable languages: an introduction, in *Semigroups, formal languages and groups* (editor J. Fountain) Kluwer Academic Publishers, 1995, 1–32.
- [106] J.-E. Pin, Syntactic semigroups, in *Handbook of formal languages, Volume 1* (editors G. Rozenberg, A. Salomaa), Springer, 1997, 679–746.
- [107] J.-E. Pin, Tropical semirings, in *Idempotency* (editor J. Gunawardena), CUP, 1998, 50–69.
- [108] G. Polya, *How to solve it*, Penguin Books, 1990.
- [109] M. O. Rabin, D. Scott, Finite automata and their decision problems, *IBM Journal of Research and Development* **3** (1959), 114–125. Reprinted in *Sequential machines* (editor E. F. Moore), Addison-Wesley, Reading, Massachusetts, 1964, 63–91.
- [110] J. Reiterman, The Birkhoff theorem for finite algebras, *Algebra Universalis* **14** (1982), 1–10.
- [111] J. Rhodes, *Applications of automata theory and algebra*, Department of Mathematics, University of California, Berkeley, California.
- [112] E. Roche, Y. Schabes (editors), *Finite-state language processing*, The MIT Press, 1997.
- [113] A. Salomaa, *Theory of automata*, Pergamon Press, 1969.

- [114] M. P. Schützenberger, Une théorie algébrique du codage, in *Séminaire Dubreil-Pisot* (1955/56), exposé no. 15.
- [115] M. P. Schützenberger, Une théorie algébrique du codage, *Comptes Rendus des Séances de l'Académie des Sciences Paris* **242** (1956), 862–864.
- [116] M. P. Schützenberger, On finite monoids having only trivial subgroups, *Information and control* **8** (1965), 190–194.
- [117] M. P. Schützenberger, Sur certaines variétés de monoids finis, in *Automata theory* (editor E. R. Cainiello), Academic Press, New York, 1966.
- [118] C. E. Shannon, J. McCarthy (editors), *Automata studies*, Princeton University Press, Princeton, New Jersey, 1956.
- [119] D. Shasha, C. Lazere, *Out of their minds*, Copernicus, 1995.
- [120] J. C. Shepherdson, The reduction of two-way automata to one-way automata, *IBM Journal of Research and Development* **3** (1959), 198–200.
- [121] I. Simon, Piecewise testable events, *Lecture Notes in Computer Science* **33**, Springer-Verlag, 1975, 214–222.
- [122] C. C. Sims, *Computation with finitely presented groups*, Cambridge University Press, 1994.
- [123] M. Sipser, *Introduction to the theory of computation*, PWS Publishing Company, 1997.
- [124] M. Smith, *Station X*, Channel 4 Books, 2000.
- [125] B. Steinberg, Finite state automata: a geometric approach, *Transactions of the American Mathematical Society* **353** (2001), 3409–3464.
- [126] G. A. Stephen, *String searching algorithms*, World Scientific, 1994.
- [127] I. Stewart, *Galois theory*, Second Edition, Chapman and Hall, 1998.
- [128] H. Straubing, Finite semigroup varieties of the form $V * D$, *Journal of Pure and Applied Algebra* **36** (1985), 53–94.
- [129] H. Straubing, *Finite automata, formal logic, and circuit complexity*, Birkhäuser, 1994.
- [130] W. Thomas, Languages, automata, and logic, in *Handbook of formal languages, Volume 3* (editors G. Rozenberg, A. Salomaa), Springer, 1997, 389–455.
- [131] K. Thompson, Regular expression search algorithm, *Communications of the ACM* **11** (1968), 419–422.

- [132] W. P. Thurston, Groups, tilings and finite state automata, *Summer 1989 AMS Colloquium Lectures*, National Science Foundation, University of Minnesota.
- [133] B. Tilson, Categories of algebra: an essential ingredient in the theory of monoids, *Journal of Pure and Applied Algebra* **48** (1987), 83–198.
- [134] A. N. Trahtman, A polynomial time algorithm for local testability and its level, *International Journal of Algebra and Computation* **9** (1998), 31–39.
- [135] A. M. Turing, On computable numbers with an application to the Entscheidungsproblem, *Proceedings of the London Mathematical Society* **2** (1936), 230–265. Erratum: *Ibid* **43** (1937), 544–546.
- [136] S. Yu, Regular languages, in *Handbook of formal languages, Volume 1* (editors G. Rozenberg, A. Salomaa), Springer, 1997, 41–110.
- [137] Y. Zalcstein, Locally testable languages, *Journal of Computing System Science* **6** (1972), 151–167.