

# Reference List

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## References

- [1] S. Abramsky and A. Jung. *Domain theory*. Oxford University Press, 1994.
- [2] K. Ambos-Spies and P. Fejer. Degrees of Unsolvability. Unpublished preprint., 2006.
- [3] K. Ambos-Spies, K. Weihrauch, and X. Zheng. Weakly computable real numbers. *Journal of Complexity*, 16:679–690, 2000.
- [4] Aristotle. The metaphysics.
- [5] S. Arora and B. Barak. *Computational complexity: a modern approach*. Cambridge University Press, 2009.
- [6] E. A. Asarin and A. V. Prokowskij. Primeenie kolmogorovskoi slozhnosti k anlizu dinamiki upravlyemykh sistem. *Automatika i Telemekhanika*, 1:25–33, 1986.
- [7] V. Becher. Turing’s Normal Numbers: Towards Randomness. In S. B. Cooper, A. Dawar, and B. Löwe, editors, *CiE 2012*, volume 7318 of *LNCS*, pages 35–45, Heidelberg, 2012. Springer.
- [8] A. S. Besicovitch. A general form of the covering principle and relative differentiation of additive functions. *Proceedings of the Cambridge Philosophical Society*, 41(2):103–110, 1945.
- [9] L. Bienvenu, A. Day, M. Hoyrup, I. Mezhirov, and A. Shen. A constructive version of Birkhoff’s ergodic theorem for Martin-Löf random points. *Information and Computation*, 2011.
- [10] L. Bienvenu, A. Day, I. Mezhirov, and A. Shen. Ergodic-type characterizations of algorithmic randomness. *Programs, Proofs, Processes*, pages 49–58, 2010.

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- [11] L. Bienvenu, R. Downey, N. Greenberg, A. Nies, and D. Turetsky. Characterizing lowness for Demuth randomness. Submitted.
- [12] L. Bienvenu and W. Merkle. Reconciling data compression and kolmogorov complexity. In L. Arge, C. Cachin, T. Jurdziński, and A. Tarlecki, editors, *Automata, Languages and Programming*, volume 4596 of *Lecture Notes in Computer Science*, pages 643–654, Berlin, 2007. Springer.
- [13] L. Bienvenu and J. S. Miller. Randomness and lowness notions via open covers. *Annals of Pure and Applied Logic*, 163:506–518, 2012.
- [14] P. Billingsley. *Convergence of Probability Measures*. John Wiley, New York, 1968.
- [15] V.I. Bogachev. *Measure theory*. Springer, 2007.
- [16] Émile Borel. Les probabilités Dénombrables et leurs applications arithmétiques. *Rendiconti del Circolo Matematico di Palermo*, 27:247–270, 1909.
- [17] Volker Bosserhoff. Notions of probabilistic computability on represented spaces. *Journal of Universal Computer Science*, 14(6):956–995, 2008.
- [18] C. Bourke, J. M. Hitchcock, and N. V. Vinodchandran. Entropy rates and finite-state dimension. *Theoretical Computer Science*, 349:392–406, 2005.
- [19] V. Brattka. Computable versions of baire’s category theorem. *Mathematical Foundations of Computer Science 2001*, pages 224–235, 2001.
- [20] V. Brattka, P. Hertling, and K. Weihrauch. A tutorial on computable analysis. *New Computational Paradigms*, pages 425–491, 2008.
- [21] V. Brattka, J. S. Miller, and A. Nies. Randomness and differentiability. Submitted.
- [22] Vasco Brattka. Computability over topological structures. In S. B. Cooper and S. S. Goncharov, editors, *Computability and Models*, pages 93–136. Kluwer Academic Publishers, New York, 2003.
- [23] Vasco Brattka. Limit computable functions and subsets. Unpublished notes, 2007.
- [24] B. M. Brown. A general three-series theorem. *Proc. Amer. Math. Soc.*, 28:573–577, 1971.
- [25] B. M. Brown. Erratum: “A general three-series theorem”. *Proc. Amer. Math. Soc.*, 32:634, 1972.
- [26] C. Calude. *Information and randomness: An algorithmic perspective*. Springer Verlag, 2002.

- [27] Cristian Calude, Peter Hertling, Bakhadyr Khoussainov, and Yongge Wang. Recursively enumerable reals and Chaitin Omega numbers. *Theoretical Computer Science*, 255(1):125–149, 2001.
- [28] G. Chaitin. Information-theoretical characterizations of recursive infinite strings. *Theoretical Computer Science*, 2:45–48, 1976.
- [29] G. J. Chaitin. On the length of programs for computing finite binary sequences. *J. of the ACM*, 13:547–569, 1966.
- [30] G. J. Chaitin. A theory of program size formally identical to information theory. *Journal of the Association for Computing Machinery*, 22:329–340, 1975.
- [31] D. G. Champernowne. The Construction of Decimals Normal in the Scale of Ten. *Journal of the London Mathematical Society*, 8:254–260, 1933.
- [32] S. B. Cooper. *Computability theory*. CRC Press, 2004.
- [33] A. H. Copeland and P. Erdős. Note on normal numbers. *Bulletin of the American Mathematical Society*, 52:857–860, 1946.
- [34] D. Diamondstone and B. Kjos-Hanssen. Martin-Löf randomness and Galton-Watson processes. *Annals of Pure and Applied Logic*, 163(1), 2012.
- [35] George Davie. The Borel-Cantelli lemmas, probability laws and Kolmogorov complexity. *Annals of Probability*, 29(4):1426–1434, 2001.
- [36] A. Philip Dawid. Statistical theory: the prequential approach (with discussion). *Journal of the Royal Statistical Society A*, 147:278–292, 1984.
- [37] A. Philip Dawid and Vladimir Vovk. Prequential probability: principles and properties. *Bernoulli*, 5:125–162, 1999.
- [38] Adam R. Day and Joseph S. Miller. Randomness for non-computable measures. To appear in the Transactions of the American Mathematical Society.
- [39] O. Demuth. The differentiability of constructive functions of weakly bounded variation on pseudo numbers. *Comment. Math. Univ. Carolin.*, 16(3):583–599, 1975.
- [40] O. Demuth. Remarks on the structure of tt-degrees based on constructive measure theory. *Commentationes Mathematicae Universitatis Carolinae*, 29:233–247, 1988.
- [41] D. Diamondstone, N. Greenberg, and D. Turetsky. A van Lambalgen theorem for demuth randomness. Submitted.

- [42] R. Downey, N. Greenberg, N. Mihailovic, and A. Nies. Lowness for computable machines. In C. T. Chong, Q. Feng, T. A. Slaman, W. H. Woodin, and Y. Yang, editors, *Computational Prospects of Infinity: Part II*, Lecture Notes Series, pages 79–86. World Scientific Publishing Company, 2008.
- [43] R. Downey and E. Griffiths. Schnorr randomness. *Journal of Symbolic Logic*, 69(2):533–554, 2004.
- [44] R. Downey, E. Griffiths, and G. LaForte. On Schnorr and computable randomness, martingales, and machines. *Mathematical Logic Quarterly*, 50(6):613–627, 2004.
- [45] R. Downey and D. R. Hirschfeldt. *Algorithmic Randomness and Complexity*. Springer, Berlin, 2010.
- [46] R. G. Downey, D. R. Hirschfeldt, and A. Nies. Randomness, computability and density. *SIAM Journal on Computing*, 31:1169–1183, 2002.
- [47] Rod Downey, Denis R. Hirschfeldt, Joseph S. Miller, and A. Nies. Relativizing Chaitin’s halting probability. *Journal of Mathematical Logic*, 5(2):167–192, 2005.
- [48] Abbas Edalat. A computable approach to measure and integration theory. *Information and Computation*, 207(5):642–659, 2009.
- [49] V. A. Egorov. A way of proving theorems on the law of the iterated logarithm. *Theory Probab. Appl.*, 29:126–132, 1984.
- [50] V. A. Egorov. On the strong law of large numbers and the law of the iterated logarithm for martingales and sums of independent random variables. *Theor. Veroyatnost. i Primenen.*, 35(4):691–703, 1990.
- [51] Evan Fisher. On the law of the iterated logarithm for martingales. *Ann. Probab.*, 20(2):675–680, 1992.
- [52] W. Fouché. Arithmetical representations of Brownian motion I. *Journal of Symbolic Logic*, 65(1):421–442, 2000.
- [53] J. Franklin, N. Greenberg, J. Miller, and K. Ng. Martin-Löf random points satisfy Birkhoff’s ergodic theorem for effectively closed sets. *Proceedings of the AMS*, 140:3623–3628, 2012.
- [54] J. N. Y. Franklin and F. Stephan. Schnorr trivial sets and truth-table reducibility. *Journal of Symbolic Logic*, 75(2):501–521, 2010.
- [55] J. N. Y. Franklin, F. Stephan, and L. Yu. Relativizations of Randomness and Genericity Notions. Technical report, School of Computing, National University of Singapore, 2009. Technical Report TRA2/09.

- [56] J. N. Y. Franklin, F. Stephan, and L. Yu. Relativizations of randomness and genericity notions. *Bulletin of the London Mathematical Society*, 43(4):721–733, 2011.
- [57] J.N.Y. Franklin and F. Stephan. Van Lambalgen’s Theorem and high degrees. submitted.
- [58] Johanna N. Y. Franklin and Keng Meng Ng. Difference randomness. In *Proc. Amer. Math. Soc*, volume 139, pages 345–360, 2011.
- [59] C. Freer, B. Kjos-Hanssen, A. Nies, and F. Stephan. Algorithmic aspects of Lipschitz functions. In preparation.
- [60] P. Gács. Exact expressions for some randomness tests. *Z. Math. Log. Grdl. M.*, 26:385–394, 1980.
- [61] P. Gács. Every set is reducible to a random one. *Information and Control*, 70:186–192, 1986.
- [62] P. Gács. Uniform test of algorithmic randomness over a general space. *Theoretical Computer Science*, 341:91–137, 2005.
- [63] Péter Gács, Mathieu Hoyrup, and Cristobal Rojas. Randomness on Computable Probability Spaces - A Dynamical Point of View. *Theory of Computing System*, 48(3):465–485, 2011.
- [64] Stefano Galatolo, Mathieu Hoyrup, and Cristobal Rojas. A constructive Borel-Cantelli lemma. Constructing orbits with required statistical properties. *Theoretical Computer Science*, 410(21-23):2207–2222, 2009.
- [65] Stefano Galatolo, Mathieu Hoyrup, and Cristobal Rojas. Effective symbolic dynamics, random points, statistical behavior, complexity and entropy. *Information and Computation*, 208(1):23–41, 2010.
- [66] D. Gilat. On the Nonexistence of a Three Series Condition for Series of Nonindependent Random Variables. *The Annals of Mathematical Statistics*, 42(1):409, 1971.
- [67] D. Gilat. On the nonexistence of a three series condition for series of nonindependent random variables. *The Annals of Mathematical Statistics*, 42(1):409, 1971.
- [68] D. Gillies. *Philosophical theories of probability*. Routledge, 2000.
- [69] Tanja Grubba, Matthias Schröder, and Klaus Weihrauch. Computable metrization. *Mathematical Logic Quarterly*, 53(4-5):381–395, 2007.
- [70] Alan Gut. *Probability: a Graduate Course*. Springer, New York, 2005.
- [71] Ian Hacking. *The Emergence of Probability*. Cambridge University Press, London, 1975.

- [72] A. Hájrek. Interpretations of probability. *Stanford Encyclopedia of Philosophy*, 2009.
- [73] P. Hartman and A. Wintner. On the law of the iterated logarithm. *American J. Math.*, 63:169–176, 1941.
- [74] Peter Hertling and Klaus Weihrauch. Randomness Spaces. In *Automata, Languages and Programming, Proceedings of the 25th International Colloquium, ICALP'98*, pages 796–807. Springer-Verlag, 1998.
- [75] Peter Hertling and Klaus Weihrauch. Random elements in effective topological spaces with measure. *Information and Computation*, 181(1):32–56, 2003.
- [76] TP Hill. Conditional generalizations of strong laws which conclude the partial sums converge almost surely. *The Annals of Probability*, 10(3):828–830, 1982.
- [77] D. Hirschfeldt, A. Nies, and F. Stephan. Using random sets as oracles. *Journal of the London Mathematical Society*, 75:610–622, 2007.
- [78] G. Hjorth and A. Nies. Randomness via effective descriptive set theory. *Journal of the London Mathematical Society*, 75(2):495–508, 2007.
- [79] R. Hözl and W. Merkle. Traceable sets. *Theoretical Computer Science*, pages 301–315, 2010.
- [80] Yasunori Horikoshi and Akimichi Takemura. Implications of contrarian and one-sided strategies for the fair-coin game. *Stochastic Process. Appl.*, 118(11):2125–2142, 2008.
- [81] M. Hoyrup, C. Rojas, and K. Weihrauch. The Radon-Nikodym operator is not computable. In CCA 2011.
- [82] M. Hoyrup, C. Rojas, and K. Weihrauch. Computability of the Radon-Nikodym derivative. *Models of Computation in Context*, pages 132–141, 2011.
- [83] M. Hoyrup, C. Rojas, and K. Weihrauch. Computability of the radon-nikodym derivative. In Benedikt Löwe, Dag Normann, Ivan Soskov, and Alexandra Soskova, editors, *Models of Computation in Context*, volume 6735 of *Lecture Notes in Computer Science*, pages 132–141. Springer, 2011.
- [84] Mathieu Hoyrup and Cristobal Rojas. An Application of Martin-Löf Randomness to Effective Probability Theory. In *CiE*, pages 260–269, 2009.
- [85] Mathieu Hoyrup and Cristobal Rojas. Applications of Effective Probability Theory to Martin-Löf Randomness. In *ICALP (1)*, pages 549–561, 2009.

- [86] Mathieu Hoyrup and Cristobal Rojas. Computability of probability measures and Martin-Löf randomness over metric spaces. *Information and Computation*, 207(7):830–847, 2009.
- [87] M. Hutter. *Universal artificial intelligence: Sequential decisions based on algorithmic probability*. Springer, 2005.
- [88] M. Hutter. On the foundations of universal sequence prediction. *Theory and Applications of Models of Computation*, pages 408–420, 2006.
- [89] M. Hutter and A. Muchnik. On semimeasures predicting Martin-Löf random sequences. *Theoretical Computer Science*, 382:247–261, 2007.
- [90] E. T. Jaynes. *Probability theory: the logic of science*. Cambridge University Press, 2003.
- [91] S. Kautz. *Degrees of Random Sets*. PhD thesis, Cornell University, 1991.
- [92] A.S. Kechris. *Classical descriptive set theory*. Springer, 1995.
- [93] A. Y. Khinchin. Über einen Satz der Wahrscheinlichkeitrechnung. *Fund. Mat.*, 6:9–20, 1924.
- [94] B. Kjos-Hanssen. Infinite subsets of random sets of integers. *Mathematical Research Letters*, 16(1):103–110, 2009.
- [95] B. Kjos-Hanssen. The probability distribution as a computational resource for randomness testing. *Journal of Logic and Analysis*, 2(10):1–13, 2010.
- [96] B. Kjos-Hanssen, A. Nies, and F. Stephan. Lowness for the Class of Schnorr Random Reals. *SIAM Journal on Computing*, 35(3):647–657, 2005.
- [97] A. Kolmogorov. *Grundbegriffe der Wahrscheinlichkeitsrechnung*. Springer, 1933.
- [98] A. N. Kolmogorov. Über das Gesetz des Iterierten Logarithmus. *Math. Ann.*, 101:126–135, 1929.
- [99] A. N. Kolmogorov. Sur la loi forte des grands nombres. *CRAS Paris*, 191:910–912, 1930.
- [100] A. N. Kolmogorov. On tables of random numbers. *Sankhyā: The Indian Journal of Statistics, Series A*, 25(4):369–376, 1963.
- [101] A. N. Kolmogorov. Three approaches to the quantitative definition of information. *Problems of Information Transmission*, 1:1–7, 1965.
- [102] C. Kreitz and K. Weihrauch. Theory of representations. *Theoretical Computer Science*, 38:35–53, 1985.

- [103] M. Kumon, A. Takemura, and K. Takeuchi. Game-theoretic versions of strong law of large numbers for unbounded variables. *Stochastics An International Journal of Probability and Stochastic Processes*, 79(5):449–468, 2007.
- [104] M. Kumon, A. Takemura, and K. Takeuchi. Sequential optimizing strategy in multi-dimensional bounded forecasting games. *Stochastic Processes and their Applications*, 121:155–183, 2011.
- [105] S. A. Kurtz. *Randomness and Genericity in the Degrees of Unsolvability*. PhD thesis, University of Illinois at Urbana-Champaign, 1981.
- [106] A. Kučera. Measure,  $\Pi_1^0$  classes, and complete extensions of PA. In *Recursion Theory Week*, volume 1141 of *Lecture Notes in Mathematics*, pages 245–259, Berlin, 1984, 1985. Springer.
- [107] A. Kučera. On relative randomness. *Ann. Pure Appl. Logic*, 63:61–67, 1993.
- [108] A. Kučera and T. Slaman. Randomness and recursive enumerability. *SIAM Journal on Computing*, 31(1):199–211, 2002.
- [109] A. Kučera and S. Terwijn. Lowness for the class of random sets. *J. Symbolic Logic*, 64:1396–1402, 1999.
- [110] H. Lebesgue. *Leçons sur l'Intégration et la recherche des fonctions primitives*. Gauthier-Villars, Paris, 1904.
- [111] Henri Lebesgue. Sur l'intégration des fonctions discontinues. *Annales scientifiques de l'École Normale Supérieure*, 27:361–450, 1910.
- [112] L. A. Levin. *Some Theorems on the Algorithmic Approach to Probability Theory and Information Theory*. PhD thesis, Moscow, 1971.
- [113] L. A. Levin. On the notion of a random sequence. *Soviet Mathematics Doklady*, 14:1413–1416, 1973.
- [114] L. A. Levin. Uniform tests of randomness. *Soviet Math. Dokl.*, 17(2):337–340, 1976.
- [115] L. A. Levin. Randomness conservation inequalities: Information and independence in mathematical theories. *Information and Control*, 61(1):15–37, 1984.
- [116] Leonid A. Levin. Laws of information conservation (nongrowth) and aspects of the foundation of probability theory. *Problems of Information Transmission*, 10:206–210, 1974.
- [117] P. Lévy. *Théorie de l'Addition des Variables Aléatoires*. Gauthier-Villars, 1937.

- [118] Ming Li and Paul Vitányi. *An introduction to Kolmogorov complexity and its applications*. Graduate Texts in Computer Science. Springer-Verlag, New York, third edition edition, 2009.
- [119] J. H. Lutz. Gales and the constructive dimension of individual sequences. In U. Montanari, J. D. P. Rolim, and E. Welzl, editors, *Automata, Languages and Programming. 27th International Colloquium, ICALP 2000. Geneva, Switzerland, July 9-15, 2000.*, volume 1853 of *Lecture Notes in Computer Sciences*, pages 902–913, Berlin, 2000. Springer.
- [120] J. H. Lutz. Dimension in complexity classes. *SIAM Journal on Computing*, 32:1236–1259, 2003.
- [121] J. H. Lutz. The dimensions of individual strings and sequences. *Information and Computation*, 187:49–79, 2003.
- [122] J. Marcinkiewicz and A. Zygmund. Remarque sur la loi, du logarithme itéré. *Fund. Math.*, 29:215–222, 1937.
- [123] J. Marcinkiewicz and A. Zygmund. Sur les fonctions indépendantes. *Fund. Math.*, 29:60–90, 1937.
- [124] P. Martin-Löf. The Definition of Random Sequences. *Information and Control*, 9(6):602–619, 1966.
- [125] W. Merkle and N. Mihailović. On the construction of effective random sets. *Mathematical Foundations of Computer Science*, pages 568–580, 2002.
- [126] W. Merkle, N. Mihailović, and T. Slaman. Some results on effective randomness. *Theory of Computing Systems*, 39:702–721, 2006.
- [127] W. Merkle, N. Mihailovic, and T.A. Slaman. Some results on effective randomness. *Theory of Computing Systems*, 39(5):707–721, 2006.
- [128] W. Merkle, J. Miller, A. Nies, J. Reimann, and F. Stephan. Kolmogorov-Loveland randomness and stochasticity. *Annals of Pure and Applied Logic*, 138(1-3):183–210, 2006.
- [129] J. S. Miller. Degrees of unsolvability of continuous functions. *The Journal of Symbolic Logic*, 69(2):555–584, 2004.
- [130] J. S. Miller and L. Yu. On initial segment complexity and degrees of randomness. *Transactions of the American Mathematical Society*, 360:3193–3210, 2008.
- [131] R. Von Mises. *Mathematical theory of probability and statistics*. Academic Press Inc, 1964.
- [132] Michael W. Mislove. Local Dcpos, Local Cpos and Local Completions. *Electr. Notes Theor. Comput. Sci.*, 20, 1999.

- [133] Y. N. Moschovakis. *Descriptive set theory*. Elsevier, second edition, 2009.
- [134] R. Nakajima, M. Kumon, A. Takemura, and K. Takeuchi. Approximations and asymptotics of upper hedging prices in multinomial models, 2010. [arXiv:1007.4372v1](https://arxiv.org/abs/1007.4372v1). To appear in *Japan Journal of Industrial and Applied Mathematics*.
- [135] A. Nies. Lowness properties and randomness. *Advances in Mathematics*, 197:274–305, 2005.
- [136] A. Nies. Eliminating concepts. In *Computational prospects of infinity II*, volume 15 of *IMS Lecture Notes Series*, pages 225–248, 2008.
- [137] A. Nies. *Computability and Randomness*. Oxford University Press, USA, 2009.
- [138] A. Nies, F. Stephan, and S.A. Terwijn. Randomness, relativization and Turing degrees. *Journal of Symbolic Logic*, 70:515–535, 2005.
- [139] P. Odifreddi. *Classical Recursion Theory*, volume 1. North-Holland, 1990.
- [140] P. Odifreddi. *Classical Recursion Theory*, volume 2. North-Holland, 1999.
- [141] N. Pathak, C. Rojas, and S. G. Simpson. Schnorr randomness and the Lebesgue Differentiation Theorem. To appear in Proceedings of the American Mathematical Society.
- [142] V. V. Petrov. *Limit Theorems of Probability Theory: Sequences of Independent Random Variables*. Oxford University Press, USA, 1995.
- [143] V. V. Petrov. On the Law of the Iterated Logarithm for a Sequence of Independent Random Variables with Finite Variances. *Journal of Mathematical Sciences*, 118(6):5610–5612, 2003.
- [144] Marian B. Pour-El and Jonathan I. Richards. *Computability in analysis and physics*. Springer, 1989.
- [145] S. Rathmanner and M. Hutter. A Philosophical Treatise of Universal Induction. *Entropy*, 13:1076–1136, 2011.
- [146] Jason Rute. Randomness, martingales and differentiability. In preparation, 2011.
- [147] G. Sacks. *Degrees of Unsolvability*. PhD thesis, Princeton University, 1963.
- [148] G. Sacks. On the degrees less than  $\mathbf{0}'$ . *Annals of Mathematics*, 77:211–231, 1963.
- [149] G. E. Sacks. *Higher recursion theory*. Springer, 1990.

- [150] R. L. Schilling. *Measures, integrals and martingales*. Cambridge University Press, 2005.
- [151] C. P. Schnorr. *Zufälligkeit und Wahrscheinlichkeit*, volume 218 of *Lecture Notes in Mathematics*. Springer-Verlag, Berlin-New York, 1971.
- [152] C. P. Schnorr. Process complexity and effective random tests. *Journal of Computer and System Sciences*, 7:376–388, 1973.
- [153] C. P. Schnorr and H. Stimm. Endliche Automaten und Zufallsfolgen. *Acta Informatica*, 1:345–359, 1972.
- [154] C.P. Schnorr. A unified approach to the definition of a random sequence. *Mathematical Systems Theory*, 5:246–258, 1971.
- [155] M. Schröder. Effective metrization of regular spaces. In Ker-I Ko, Anil Nerode, Marian B. Pour-el, Klaus Weihrauch, and Jirí Wiedermann, editors, *Computability and Complexity in Analysis*, volume 235 of *Informatik Berichte*, pages 63–80, FernUniversität, August 1998. CCA Workshop, Brno, Czech Republic, August, 1998.
- [156] M. Schröder. Admissible Representations for Probability Measures. *Mathematical Logic Quarterly*, 53(4-5):431–445, 2007.
- [157] G. Shafer and V. Vovk. *Probability and Finance: It's Only a Game!* Wiley, 2001.
- [158] Glenn Shafer. Non-Additive Probabilities in the Work of Bernoulli and Lambert. *Archive for History of Exact Sciences*, 19(4):309–370, 1978.
- [159] A. N. Shiryaev. *Probability*. Springer, second edition, 1995.
- [160] R. I. Soare. *Recursively enumerable sets and degrees*. Perspectives in Mathematical Logic. Springer, Berlin, 1987.
- [161] R. I. Soare. The history and concept of computability. *Studies in Logic and the Foundations of Mathematics*, 140:3–36, 1999.
- [162] R. J. Solomonoff. A formal theory of inductive inference I, II. *Information and Control*, 7:1–22,224–254, 1964.
- [163] R. J. Solomonoff. Complexity-based induction systems: Comparisons and convergence theorems. *IEEE Transaction on Information Theory*, IT-24:422–432, 1978.
- [164] R.J. Solomonoff. Algorithmic probability: Theory and applications. *Information Theory and Statistical Learning*, pages 1–23, 2009.
- [165] R. Solovay. Draft of paper (or series of papers) on Chaitin’s work. unpublished notes, May 1975. 215 pages.

- [166] F. Stephan. Martin-Löf random sets and PA-complete sets. In *Logic Colloquium '02*, volume 27 of *Lecture Notes in Logic*, pages 342–348. Association for Symbolic Logic, 2006.
- [167] William F. Stout. A martingale analogue of Kolmogorov's law of the iterated logarithm. *Z. Wahrscheinlichkeitstheorie und Verw. Gebiete*, 15:279–290, 1970.
- [168] V. Strassen. A converse to the law of the iterated logarithm. *Z. Wahrscheinlichkeitstheorie und Verw. Gebiete*, 4:265–268, 1966.
- [169] S. Takazawa. Convergence of series of moderate and small deviation probabilities in game-theoretic probability. Submitted.
- [170] S. Takazawa. Exponential inequalities and the law of the iterated logarithm in the unbounded forecasting game, 2010. To appear in *Annals of the Institute of Statistical Mathematics*.
- [171] S. Takazawa. An exponential inequality and the convergence rate of the strong law of large numbers in the unbounded forecasting game. *Stochastics*, 83:117–125, 2011.
- [172] S. A. Terwijn and D. Zambella. Computational randomness and lowness. *Journal of Symbolic Logic*, 66(3):1199–1205, 2001.
- [173] Jaroslav Tiser. Differentiation Theorem for Gaussian Measures on Hilbert Space. *Transactions of the American Mathematical Society*, 308(2):655–666, 1988.
- [174] R. J. Tomkins. On the law of the iterated logarithm. *Ann. Probability*, 6(1):162–168, 1978.
- [175] A. M. Turing. On computable numbers, with an application to the Entscheidungsproblem. *Proceedings of the London Mathematical Society*, 420:230–265, 1936.
- [176] A. M. Turing. A note on normal numbers. In J. L. Britton, editor, *Collected Works of A. M. Turing: Pure Mathematics*, pages 263–265. North Holland, Amsterdam, 1992. with notes of the editor in 265-265.
- [177] M. van Lambalgen. *Random sequences*. PhD thesis, University of Amsterdam, 1987.
- [178] M. van Lambalgen. Randomness and foundations of probability: von Mises' axiomatisation of random sequences. *Lecture Notes-Monograph Series*, 30:347–367, 1996.
- [179] J. Ville. Étude critique de la notion de collectif. *Gauthier-Villars*, 1939.
- [180] R. von Mises. Grundlagen der Wahrscheinlichkeitsrechnung. *Mathematische Zeitschrift*, 5:52–99, 1919.

- [181] R. Von Mises. *Probability, statistics, and truth*. Dover Pubns, 1981.
- [182] V. Vovk, A. Gammerman, and G. Shafer. *Algorithmic learning in a random world*. Springer Verlag, 2005.
- [183] V. Vovk and V. Vyugin. On the empirical validity of the Bayesian method. *Journal of the Royal Statistical Society. Series B (Methodological)*, 55(1):253–266, 1993.
- [184] V. G. Vovk. The law of the iterated logarithm for random Kolmogorov, or chaotic, sequences. *Theory of Probability and Its Applications*, 32:413–425, 1987.
- [185] V. G. Vovk. Kolmogorov-Stout law of the iterated logarithm. *Mathematical Notes*, 44(1), 1988.
- [186] Vladimir Vovk and Alexander Shen. Prequential randomness and probability. *Theoret. Comput. Sci.*, 411(29-30):2632–2646, 2010.
- [187] Vladimir Vovk and Alexander Shen. Prequential randomness and probability. *Theoretical Computer Science*, 411:2632–2646, 2010.
- [188] K. Weihrauch. Computably Regular Topological Spaces. Submitted.
- [189] K. Weihrauch. A foundation for computable analysis. In D. S. Bridges et al., editor, *Combinatorics, Complexity, and Logic*, Discrete Mathematics and Theoretical Computer Science, pages 66–89, Singapore, 1997. Springer-Verlag. Proceedings of DMTCS’96, Auckland.
- [190] K. Weihrauch. *Computable Analysis: an introduction*. Springer, Berlin, 2000.
- [191] K. Weihrauch. The computable multi-functions on multi-represented sets are closed under programming. *Journal of Universal Computer Science*, 14(6):801–844, 2008.
- [192] K. Weihrauch and T. Grubba. Elementary Computable Topology. *Journal of Universal Computer Science*, 15(6):1381–1422, 2009.
- [193] Klaus Weihrauch. Computability on the Probability Measures on the Borel Sets of the Unit Interval. *Theoretical Computer Science*, 219(1-2):421–437, 1999.
- [194] Klaus Weihrauch. Computable Separation in Topology, from  $T_0$  to  $T_3$ . In *CCA*, 2009.
- [195] Klaus Weihrauch. Computable Separation in Topology, from  $T_0$  to  $T_2$ . *Journal of Universal Computer Science*, 16(18):2733–2753, 2010.
- [196] Stephen Willard. *General Topology*. Addison-Wesley, 1970.

- [197] D. Williams. *Probability with Martingales*. Cambridge University Press, 1991.
- [198] Yongcheng Wu and Klaus Weihrauch. A computable version of the Daniell-Stone theorem on integration and linear functionals. *Theoretical Computer Science*, 359(1-3):28–42, 2006.
- [199] M. Yasugi, T. Mori, and Y. Tsujii. Effective properties of sets and functions in metric spaces with computability structure. *Theoretical Computer Science*, 219(1–2):467–486, 1999.
- [200] L. Yu. When van Lambalgen’s Theorem fails. *Proceedings of the American Mathematical Society*, 135(3):861–864, March 2007.
- [201] D. Zambella. On sequences with simple initial segments. Technical report, Univ. Amsterdam, 1990. ILLC technical report ML 1990-05.
- [202] A. K. Zvonkin and L. A. Levin. The complexity of finite objects and the development of the concepts of information and randomness by means of the theory of algorithms. *Russian Mathematical Surveys*, 25(6):83–124, 1970.