Nikolai Konstantinovich Vereshchagin

Curriculum Vitae

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Dept. of Mathematical Logic and
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1 General

1.1 Personal

Born 27.10.1958 in Moscow, Russia. Married 1981, has three children born in 1982, 1983, 1987. Citizen of Russian Federation.

1.2 Current affiliation

Professor at Lomonossov Moscow State University.

1.3 Research area

Computational complexity, Kolmogorov complexity, Shannon entropy, tilings.

1.4 Degrees and ranks earned

- The rank of **Full Professor** was granted in March 1997 by Ministry of Education of Russian Federation
- Degree of "**Doctor of physical and mathematical sciences**"(Habilitation) received in 1996. Thesis "Relativizability in Structural Complexity Theory"defended at Moscow State University in October 1995.
- Degree of "Candidate of physical and mathematical sciences"(Ph.D.) received in 1987. Thesis "Algorithmic Problems for Linear Recursive Sequences"defended at Moscow State University in October 1986 (Ph.D. advisor: Professor V. A. Uspensky).

1.5 Education

Moscow State University, Faculty of Mechanics and Mathematics.

- Student: 9/1976–6/1981
- Ph.D. student: 10/1981–10/1984.

2 Scientific experience

2.1 Affiliations

- Moscow State University, Faculty of Mechanics and Mathematics. Assistant 10/1984–8/1991, Senior lecturer, 9/1991–1/1992. Associate Professor (half-time) 2/1992–8/1997. Professor, 9/1998–.
- Poncelet Lab at Moscow Independent University, 01/2005-
- Institute of New Technologies in Education. Head scientist, 2/1992–9/1996.
- Maimonid State academy, Professor, 10/1996–8/1998.

2.2 Grant support

- Russian Foundation for Basic Research research grants (Principal investigator) 12-01-00864 (2012-2014), 10-01-93109 (2009–2011), 09-01-00709 (2009–2011), 06-01-00122 (2006-2008), 05-01-02803 (2005–2008), 03-01-00475 (2003-2005), 02-01-22001 (2002–2004), 01-01-01028 (2001–2002).
- Russian Foundation for Basic Research publishing grants 1999, 2000 (to publish the book "Mathematical Logic and Computation Theory")
- The American Mathematical Society's grant, 4/1993–3/1994.
- Cultural Initiative foundation grant, 9/1993
- The International Science Foundation long-term research grant (Principal Investigator), 1/1994–12/1994, project No. MQT000
- The International Science Foundation long-term research grant (Principal Investigator), 1/1995–12/1995. project No. MQT300.
- The International Science Foundation travel grant (January 1995)
- The INTAS grant, 5/1995-5/1996, project No 93-0893.

2.3 Other activities

Guest editor of the journal *Theory of Computing Systems* (Special Issue wth selected papers presented at CSR 2011) and a co-editor of Proceedings of 6th International Computer Science Symposium in Russia, CSR 2011, St. Petersburg, Russia, June 14-18, 2011. LNCS v. 6651,

Steering committee member of Conference on Computability, Complexity and Randomness (CCR) 2011-.

Co-chair of Organizing committee of 9th Conference Computer Science Russia (CSR 2014),

Chair of organizing committee: Workshop on computational and descriptional complexity and algorithms, Moscow, Aug. 29–31, 2007, Franco-Russian workshop on Algorithms, complexity and applications (2010, 2013).

Chair of Program committee of 6th Conference Computer Science Russia (CSR 2011).

Program committee member of 7th International Conference on Computability, Complexity and Randomness (CCR 2012), 7th Conference Computer Science Russia (CSR 2012), 3rd Conference Computer Science Russia (CSR 2008), 18th IEEE Conference on Computational Complexity (CCC 2003), Aarhus (Denmark) and of 18th International Symposium on Theoretical Aspects of Computer Science (STACS 2001).

Translation into Russian: M.Li and P.Vitanyi. Two Decades of Applied Kolmogorov Complexity.

2.4 Conference contributions

Invited speaker: Fourth International Computer Science Symposium in Russia (CSR 2009). 5th and 9th Conferences on Computability in Europe (CiE 2009, 2013). 15th Workshop on Logic, Language, Information and Computation. Edinburgh (WOLLIC 2008). 5th Workshop on Algorithmic Information Theory (TAI'2001).

Contributed talks:

2013, 2008, 2007, 2001, 2000, 1999, 1998, 1997, 1993, 1992 Annual IEEE Conference on Computational Complexity (former Structure in Complexity).

2013,2012,2010,2009,2008,2007,2006 International Computer Science Symposium in Russia.

2008, 2006, 2005, 2004, 1999 Symposium on Theoretical Aspects of Computer Science

2007 FRG Workshop on Algorithmic Randomness, Chicago Sept. 15–19 (invited talk)

2012, 2010, 2008, 2006, 2004, 2003, 2002, 1996 Dagstuhl-seminars "Structure and Complexity "Algebraic Methods in Quantum and Classical Models

of Computation", "Algebraic Methods in Computational Complexity", and "Kolmogorov complexity and Applications", Schloß Dagstuhl, Germany

2006 Theory and Applications of Models of Computation, Third International Conference

2006 IEEE International Symposium on Information Theory

2004 31st International Colloquium on Automata, Languages and Programming, ICALP, Turku, Finland

2002 47th IEEE Symposium on Foundations of Computer Science, FOCS.

1995 Eighth Annual Conference on Computational Learning Theory, Santa Cruz, CA, USA

1995 Third Israel Symposium on Theory of Computing and Systems, Tel-Aviv, Israel (Two talks)

1994 COLORET workshop, Amsterdam, the Netherlands

1992 Conference on Logical Foundations of Computer Science. Tver, Russia.

1991 Suslin Memorial Conference. Saratov, Russia.

1988 9th All-Union Conference on Mathematical Logic, Leningrad, Russia.

1985 18th All-Union Algebraic Conference, Kishinev, Moldova

1982 6th All-Union Conference on Mathematical Logic, Tbilisi, Georgia.

2.5 International collaboration

2012, 2008, 2007, 2006, 2005, 2004, 2003, 2002, 2001 Visits to CWI, Amsterdam. Invited by H. Buhrman and P. Vitanyi.

2012 A month research visit to Université de Montpellier, France. Invited by Alexandre Shen.

2009, 2007, 2006, 2004, 2003, 2002, 2001, 2000 A month research visit to Université de Provence, France. Invited by Bruno Durand and Alexandre Shen.

1999 A 3 month research visit to Ecole Normale Supérieure of Lyon, France. Invited by Bruno Durand.

1998 A 3 month research visit to University of Würzburg, Germany. Invited by Klaus Wagner.

1997/1998 A 6 month research visit to Ecole Normale Supérieure of Lyon, France.

1997 A month research visit to Rutgers University, USA. Invited by Eric Allender.

1997 A month research visit to the University of Amsterdam. Invited by P. van Emde Boas and P.M.B. Vitányi.

1997 A 10 days research visit to Johannes Gutenberg University, Mainz, Germany. Invited by Clemens Lautemann.

1994 Two weeks research visit to University of Rochester, N.Y. USA. Invited by Lane Hemaspaandra.

3 Teaching experience

3.1 Courses taught

3.1.1 Moscow State University, Faculty of Mechanics and Mathematics

- Communication complexity, 2009, 2013 graduate.
- Error correcting codes, 2012, graduate.
- Complexity-theoretical problems in cryptography, 2001/2002, 2002/2003, 2003/2004, 2004/2005, 2005/2006, 2006/2007, 2007/2008, 2008/2009, 2009/20020, 2010/2011, 2011/2012, 2012/2013, 2013.2014 graduate.
- The method of forcing, 2005, 2007, graduate.
- Introduction into mathematical logic, Spring 1997, Spring 1999, Spring 2000, undergraduate
- Mathematical logic and algorithms, Spring 2001, 2003, 2005, 2007, 2009, 2011, 2013, graduate.
- Formal theories, 2000/2001, graduate
- Complexity of Computation I, 1985/1986 academic year, 1986/1987, 1987/1988, 1987/1989, 2003, 2006, 2008/2009, 2010/2011, 2012/2013, graduate
- Complexity of Computation II, 1990/1991, 1994/1995, 2008/2009, 2010/2011, graduate
- Axiomatic set theory, 1995/1996, Spring 2003, Spring 2004, graduate
- Kolmogorov Complexity, 1987/1988, 1988/1989, 1992/1993, 1999/2000, 2002, 2004, 2006, 2008, 2010, 2011, graduate
- Theory of Computation, 1993/1994, undergraduate.
- Complexity of Finite Functions, Fall 1994, graduate
- Mathematical logic, 1995, graduate
- Axiomatic set theory and forcing method, 1996, graduate

3.1.2 Independent Moscow University

- Computations and complexity, 2000/2001, Spring 2003, Spring 2004, undergraduate
- Probabilistically checkable proofs, 1999/2000, graduate

3.1.3 Moscow State University, Department of Structural Linguistics

- Basic algebra, Spring 2003
- Geometry, Spring 2001, 2002, 2004, 2006, 2008, 2010, 2012.
- Computation Theory, Fall 1998.
- Mathematical Backgrounds, 1984/1985 academic year, 1985/1986, 1986/1987, 1987/1988, 1988/1989, 1989/1990, 1990/1991, undergraduate.
- Complexity Theory, 1987/1988, undergraduate
- Programming, 1986/1987, undergraduate
- Elements of Coding Theory, 1986/1987, undergraduate
- Applied Mathematics, Spring 1986, undergraduate

3.1.4 Maimonid State Academy, Department of Mathematics and Computer Science

- Discrete mathematics, 1996/1997, Fall 1997, undergraduate
- Numerical methods, 1995/1996, Fall 1996, undergraduate
- Automata, language theory and parsing algorithms, 1995/1996, Fall 1996, undergraduate

4 Publication list

4.1 Textbooks

1. A. Shen and N. Vereshchagin. Mathematical Logic and Computation Theory. Elements of Set Theory. Moscow Centre for Continuous Mathematical Education, 1999, 127 pages. (Russian)
English translation: Basic Set Theory. American Mathematical Society. Student mathematical library, vol. 17. 2002

2. A. Shen and N. Vereshchagin. Mathematical Logic and Computation Theory. Computable Functions. Moscow Centre for Continuous Mathematical Education, 1999, 174 pages. (Russian)
English translation: Computable functions. American Mathematical Society. Student mathematical library, vol. 19. 2003

3. A. Shen and N. Vereshchagin. Mathematical Logic and Computation Theory. Languages and Calculi. Moscow Centre for Continuous Mathematical Education, 1999, 286 pages. (Russian)

4. V.A. Uspensky, N.K. Vereshchagin, V.E. Plisko. *An Introduction to Mathematical Logic.* Moscow University Press, 1991, Nauka, 2004, 136 pp. (Russian)

5. Н.К. Верещагин, В.А. Успенский, А. Шень. *Колмогоровская сложность и алгоритмическая случайность*. Издательство МЦНМО. 2013. 576 с.

6. Н.К, Верещагин, Е.В. Щепин. *Информация, кодирование и предсказание*. М.: Изд-во МЦНМО. 2012. 236 с.

4.2 Chapter in book

7. N. Vereshchagin. Relativizability in Complexity Theory. Chapter in book *L.D. Beklemishev, M. Pentus, and N. Vereshchagin, Provability, Complexity, Grammars, AMS Translations*, Series 2, v. **192**, 1999, pp. 87–172.

4.3 Survey papers

8. Nikolay Vereshchagin. “Kolmogorov complexity and Games”. Bulletin of the European Association for Theoretical Computer Science, No 94, Feb. 2008, 51–83

9. Andrej Muchnik, Ilya Mezhirov, Alexander Shen, Nikolai K. Vereshchagin. "Game interpretation of Kolmogorov complexity". CoRR abs/1003.4712: (2010)

4.4 Refereed journal publications

10. Nikolay K. Vereshchagin and Andrej A. Muchnik. “On joint conditional complexity (Entropy)”. Proceedings of the Steklov Institute of Mathematics Volume 274 (2011), Number 1, 90-104.

11. Glenn Shafer, Alexander Shen, Nikolai Vereshchagin, Vladimir Vovk. "Test martingales, Bayes factors, and p-values". Statistical Science 26:1 (2011) 84-101.

12. A. Philip Dawid, Steven de Rooij, Glenn Shaffer, Alexander Shen, Nikolay Vereshchagin, Vladimir Vovk. "Insuring against lost of evidence in game-theoretic probability". Statistics and Probability Letters, 81:1 (2011), 157-162.

13. N.K. Vereshchagin. P.M.B. Vitanyi, "Rate Distortion and Denoising of Individual Data Using Kolmogorov Complexity". IEEE Transactions on Information Theory, vol. 56, N 7, 2010, pages 3438–3454.

14. Laurent Bienvenu, Andrej Muchnik, Alexander Shen, Nikolay Vereshchagin. "Limit complexities revisited."Theory of Computing Systems, 2010, v.47,no.3, p.720-736.

15. Harry Buhrman, Lance Fortnow, Michal Koucky, John D. Rogers, Nikolai K. Vereshchagin, Does the Polynomial Hierarchy Collapse if Onto Functions are Invertible? Theory Comput. Syst. 46(1): 143-156 (2010).

16. Ilya Mezhirov, Nikolay Vereshchagin, On abstract resource semantics and computabilty logic. Journal of Computer and System Sciences, Volume 76, Issue 5, August 2010, Pages 356-372

17. Andrej Muchnik, Alexander Shen, Mikhail Ustinov, Nikolai K. Vereshchagin, Michael V. Vyugin: Non-reducible descriptions for conditional Kolmogorov complexity. Theor. Comput. Sci. 384(1): 77-86 (2007)

18. Harry Buhrman, Hartmut Klauck, Nikolai K. Vereshchagin, Paul M. B. Vitányi: Individual communication complexity. J. Comput. Syst. Sci. 73(6): 973-985 (2007)

19. N. Vereshchagin "Kolmogorov complexity of enumerating finite sets". Information Processing Letters 103 (2007) 34-39.

20. Noga Alon, Ilan Newman, Alexander Shen, Gabor Tardos, Nikolai Vereshchagin. “Partitioning multi-dimensional sets in a small number of “uniform” parts”. European Journal of Combinatorics 28 (2007) 134-144.

21. N. Vereshchagin and P. Vitányi. “Kolmogorov’s Structure Functions with an Application to the Foundations of Model Selection"IEEE Transactions on Information Theory 50:12 (2004) 3265-3290. Preliminary version: Proc. 47th IEEE Symp. Found. Comput. Sci., 2002, 751–760.

22. B. Durand, N. Vereshchagin. “Kolmogorov-Loveland stochasticity for

finite strings". Information Processing Letters, 91 (2004) 263-269.

23. O. Mitina and N. Vereshchagin. "How to Use Several Noisy Channels with Unknown Error Probabilities" Information and Computation 182 (2003) 229-241. Preliminary version appeared under the title "How to use expert advice in the case when actual values of estimated events remain unknown."Proc. Eighth Annual Conference on Computational Learning Theory (July 5th–8th), 1995, Santa Cruz, California, 91–97.

24. N.K. Vereshchagin, D.P. Skvortsov, E.Z. Skvortsova, A.V. Chernov. Variants of Realizability for Propositional Formulas and the Logic of the Weak Law of Excluded Middle. Proceedings of Steklov Institute of Mathematics 242 (2003) 67-85. Preliminary version appeared in: Proceedings of Computer Science Logic'02, Lecture Notes in Computer Science, 2002, v. 2471, pp. 74–88.

25. B. Durand, V. Kanovei, V. Uspensky, N. Vereshchagin. "Do stronger definitions of randomness exist?"Theoretical Computer Science 290:3 (2003) 1987-1996.

26. K. Makarychev, Yu. Makarychev, A. Romashchenko, N. Vereshchagin. "A New class of non Shannon type inequalities for entropies Communications in Information and Systems, 2:2 (2002) 147-166.

27. N. Vereshchagin. "Kolmogorov complexity conditional to large integers". Theoretical Computer Science 271 (2002) 59–67.

28. N. Vereshchagin and M. Vyugin. "Independent minimum length programs to translate between given strings". Theoretical Computer Science 271 (2002) 131–143. Preliminary version in: *Proc. of 15th Annual IEEE Conference on Computational Complexity*, Florence, July 2000, 138–144.

29. A. Romashchenko, A. Shen, and N. Vereshchagin. "Combinatorial interpretation of Kolmogorov complexity Theoretical Computer Science 271 (2002) 111–123. Preliminary version in: *Proc. of 15th Annual IEEE Conference on Computational Complexity*, Florence, July 2000, 131–137.

30. A. Chernov, An. Muchnik, A. Romashchenko, A. Shen, and N. Vereshchagin. Upper semi-lattice of binary strings with the relation "x is simple conditional to y". *Theoretical Computer Science 271 (2002) 69–95.* Preliminary version in: 14th Annual IEEE Conference on Computational Complexity, Atlanta, May 4-6, 1999, 114–122.

31. A. Shen and N. Vereshchagin. "Logical operations and Kolmogorov complexity". Theoretical Computer Science 271 (2002) 125–129.

32. D. Hammer, A. Romashchenko, A. Shen, and N. Vereshchagin. "Inequalities for Shannon entropy and Kolmogorov complexity". *Journal of Computer and Systems Sciences* 60 (2000) 442-464.

33. R. Raz, G. Tardos, O. Verbitsky, and N. Vereshchagin. "Arthur-Merlin

Games in Boolean Decision Trees". *Journal of Computer Systems Sciences* 59 (1999) 346-372,

34. B. Durand, A. Shen, and N. Vereshchagin. "Descriptive Complexity of Computable Sequences". Theoretical Computer Science 171 (2001), p. 47–58; Preliminary version: *Proc. of 16th Ann. Symp. on Theoretical Aspects of Computer Science*, Trier, Germany, March 1999, LNCS 1563, pp. 153–162.

35. N. Vereshchagin. "Randomized boolean decision trees: Several remarks." *Theoretical Computer Sciences* 207 (1998) 329-342.

36. An. Muchnik and N. Vereshchagin. "A General Method to Construct Oracles Realizing Given Relationships between Complexity Classes." *Theoretical computer science,* 157 (1996), 227–258

37. N. Vereshchagin. "Oracle Separation of Complexity Classes and Lower Bounds for Perceptrons Solving Separation Problems". *Izvestiya: Mathematics,* 59 (1995), No. 6, 1103–1122. The original version in Russian was published in *Izvestiya RAN, Seriya matematicheskaya,* 59 (1995), No. 6, 3–31.

38. L. Hemaspaandra, S. Jain, N. Vereshchagin. "Banishing Robust Turing Completeness." *Intern. J. on Found. of Comp. Science,* 1993, v. 3–4, pp. 245–265. Conference version appeared in: Logical Foundations of Computer Science. 1992. Proceedings. (Lecture notes in Computer Science, 620, 186–197)

39. N. Vereshchagin. "Relationships between NP-sets, coNP-sets and P-sets relative to random oracles". *Izvestiya Vysshyh Uchebnykh Zavedenij. Seriya Matematika,* 1993, No. 3, pp. 31–39 (Russian). English translation appeared in *Proc. 8th Annual IEEE Conference on Structure in Complexity Theory,* Santa Cruz, CA 1993, 132–138.

40. N. Vereshchagin. "Relativizable and Non-Relativizable theorems in Polynomial Theory of Algorithms." *Russian Acad. Sci. Izv. Math.*, 42 (1994), No. 2, 261–298. The original version in Russian was published in *Izvestiya Rossijskoj Akademii Nauk, Seriya matematicheskaya*, 57 (1993), No. 2, 51–90.

41. N. Vereshchagin. "A New Proof of the Decidability of the Elementary Theory of the Linearly Ordered Sets". *Mathematical Notes,* 47 (1990), 444–449. The original version in Russian was published in *Matematicheskie Zametki*, 47 (1990), No. 5, 21–38.

42. N. Vereshchagin. "On the problem of zero appearance in a linear recurrence sequence", *Mathematical Notes,* 38 (1985), Nos. 1–2, 609–615. The original version in Russian was published in *Matematicheskie zametki*, 38 (1985), No. 2, 177–189.

43. N. Vereshchagin. "The effective upper bounds for the number of zeros in linear recurrence sequences." *Vestnik MGU*, 1986, No. 1, 25–30 (Russian)

44. N. Vereshchagin. “On the zeros of linear recurrence sequences," *Soviet Math. Dokl.*, 30 (1984), No. 2, 502–505. The original version in Russian was published in *Doklady AN SSSR*, 278 (1984), No.5, 1036–1039.

4.5 Publications in proceedings of selective conferences

45. Nikolay Vereshchagin. An improving on Gutfreund, Shaltiel, and Ta-Shma's paper “If NP Languages are Hard on the Worst-Case, Then it is Easy to Find Their Hard Instances”. In: 7th International Computer Science Symposium in Russia, CSR 2012, Nizhny Novgorod, Russia, July 3-7, 2012. Proceedings, серия LNCS, издательство SPRINGER-VERLAG, том 7353, с. 203-211

46. Nikolay Vereshchagin. On Algorithmic Strong Sufficient Statistics. In: 9th Conference on Computability in Europe, CiE 2013, Milan, Italy, July 1-5, 2013. Proceedings, серия LNCS, издательство SPRINGER-VERLAG, том 7921, с. 424-433

47. Joshua Brody, Harry Buhrman, Michal Koucky, Bruno Loff, Florian Speelman, Nikolay Vereshchagin. Towards a Reverse Newman's Theorem in Interactive Information Complexity. Proceedings of 28th IEEE Conference on Computational Complexity 2013.

48. Bruno Bauwens, Anton Makhlin, Nikolay Vereshchagin, Marius Zimand. Short lists with short programs in short time. Proceedings of 28th IEEE Conference on Computational Complexity 2013. ECCC report TR13-007.

49. Nikolay Vereshchagin, “Algorithmic Minimal Sufficient Statistic Revisited”, Mathematical Theory and Computational Practice, 5th Conference on Computability in Europe, CiE 2009, Heidelberg, Germany, July 19-24, 2009. Proceedings. LNCS 5635.

50. Nikolay Vereshchagin. "An Encoding Invariant Version of Polynomial Time Computable Distributions”, Proceedings of the 5th International Computer Science Symposium in Russia, CSR 2010, Kazan, Russia, June 16-20, 2010. Lecture Notes in Computer Science v. 6072, p. 371–383.

51. Nikolay Vereshchagin, "Kolmogorov Complexity and Model Selection". Computer Science - Theory and Applications, Fourth International Computer Science Symposium in Russia, CSR 2009, Novosibirsk, Russia, August 18-23, 2009. Proceedings. LNCS 5675, pages 19-24

52. Alexey Chernov, Alexander Shen, Nikolai Vereshchagin, and Vladimir Vovk. "On-line Probability, Complexity and Randomness". Proc. 19th International Conference on Algorithmic Learning Theory (ALT 2008). Pages 138-153

53. Harry Buhrman, Michal Koucký, Nikolai Vereshchagin. Randomized Individual Communication Complexity. Proceedings of IEEE Annual Conference on Computational Complexity, June 23-26th, 2008, University of Maryland, College Park, pp. 321–331.

54. H. Buhrman, N. Vereshchagin, and R. de Wolf. "On Computation and Communication with Small Bias". In 22nd IEEE Annual Conference on Computational Complexity (CCC'07), June 12th to June 16th, 2007, San Diego, California, pp.24-32.

55. H. Buhrman, M. Cristandl, M. Koucky, Z. Lotker, B. Patt-Shamir, N. Vereshchagin. "High Entropy Random Selection Protocols."Proceedings of 10th International Workshop, APPROX 2007, and 11th International Workshop, RANDOM 2007, Princeton, NJ, USA, August 20-22, 2007. Proceedings. Lecture Notes in Computer Science, volume 4627/2007 pages 366-379

56. An. Muchnik and N. Vereshchagin. "Shannon Entropy vs. Kolmogorov Complexity". Computer Science — Theory and Applications: First International Computer Science Symposium in Russia, CSR 2006, St. Petersburg, Russia, June 8-12. 2006. Proceedings. Editors: Dima Grigoriev, John Harrison, Edward A. Hirsch Lecture Notes in Computer Science, vol. 3967 / 2006, pages 281–291.

57. Paul Vitanyi, Nikolai Vereshchagin. "On Algorithmic Rate-Distortion Function". Proc. of 2006 IEEE International Symposium on Information Theory. Sunday, July 9 -Friday, July 14, 2006 Seattle, Washington.

58. L. Fortnow, T. Lee, N. Vereshchagin, Kolmogorov Complexity with Error, *Proc. Symposium Theoretical Aspects of Comput. Science 2006,* Lecture Notes in Computer Science, vol. 3884 (2006) 137–148

59. H. Buhrman, L. Fortnow, I. Newman, and N. Vereshchagin. Increasing Kolmogorov complexity. In Proceedings of the 22nd Symposium on Theoretical Aspects of Computer Science, number 3404 in Lecture Notes in Computer Science, pages 412-421. Springer, Berlin, 2005.

60. B.Durand, N.K. Vereshchagin, M.A. Ushakov. " 'Ecological' Computations". In: Proc. 31st International Colloquium on Automata, Languages and Programming, ICALP 2004, Turku, Finland, July 12-16, 2004. Series : Lecture Notes in Computer Science , Vol. 3142 Diaz, J.; Karhumaki, J.; Lepista, A.; Sannella, D. (Eds.) pages 457-468.

61. An. Muchnik and N. Vereshchagin. "Logical operations and Kolmogorov complexity II". *Proc. of 16th Annual IEEE Conference on Computational Complexity*, Chicago, June 2001, 256–265.

62. A. Razborov and N. Vereshchagin. "One Property of Cross-Intersecting Families". *Proc. of Erdösh memorial Conference*, Hungary 1999. ECCC, TR99-014.

63. B. Durand, M. Dauchet, S. Porrot, and N. Vereshchagin. "Deterministic rational transducers and random sequences". *Proc. of Symp. Foundations of Software Systems and Computation Structures (FOSSACS)*, Lisbon, March-April 1998, LNCS 1378, pp. 258–272.

64. N. Vereshchagin. "NP-sets are Co-NP-immune Relative to a Random Oracle". - In *Proc.Third Israel Symposium on Theory of Computing and Systems,* Tel-Aviv, Jan. 1995, 40–45.

65. N. Vereshchagin. "On the Power of PP." *Proc. 7th Annual IEEE Conference on Structure in Complexity Theory,* Boston, MA, 1992, 138–143.

4.6 Publications in abstracts of selective conferences

66. N. Vereshchagin. "Bit guessing in a finite sequence". In.: *9th All-Union Conference on Mathematical Logic,* Leningrad, Russia 1988, p.28. (Russian)

67. N. Vereshchagin. "Algorithms dealing with algebraic numbers". In: *17th All-Union Algebraic Conference,* Kishinev, Moldova 1985, p. 89. (Russian)

68. N. Vereshchagin. "On an algorithmic problem for linear recursive sequences". In: 6th All-union conference on mathematical logic. Tbilisi, Georgia, 1982, P. 32

4.7 Other

69. Bruno Durand, Alexander Shen, Nikolay Vereshchagin. "Ammann tilings: a classification and an application". http://arxiv.org/abs/1112.2896v2, pages 1–34.

70. Harry Buhrman, Leen Torenvliet, Falk Unger, Nikolay Vereshchagin. "Sparse Selfreducible Sets and Nonuniform Lower Bounds". ECCC Report TR10-163. Pages 1–25.

71. N. Vereshchagin. "Algorithms dealing with algebraic numbers". In: *Algebra, Logic and Number Theory.* Moscow State University Press, 1986, 29-34. (Russian)

72. N.K. Vereshchagin, V.A. Lyubestky. "An algorithm to find secondary structure of RNA", Proc. of the Logical Center of Institut of Philosphy of Russian Academy of Sciences,2000, vol. 14, pp. 99-109. (Russian)