CIRRICULUM VITAE

Full name: Kreines Elena

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Mailing address: Faculty of Theoretical Informatics, Department of Mathematics and Mechanics, Lomonosov Moscow State University, 119991, GSP-1, Russia, Moscow

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Date of birth: 25.11.75

Family status: Married

Children: Lazar' Guterman, 12.12.2001, Grigorii Guterman, 16.02.2003, Galina Guterman, 24.07.2010, Serafima Guterman, 06.11.2016

1. Academic qualifications:

1998   M.Sc. Degree, Lomonosov Moscow State University
2001   Ph.D. Degree Lomonosov Moscow State University

Ph.D. Thesis: Rational functions with few critical values

2. Education:

1993 — 1998   Department of Mathematics and Mechanics,
              Lomonosov Moscow State University
1998 — 2001   Ph.D student at Lomonosov Moscow State University,
              Department of Mathematics and Mechanics
              Faculty of Higher Algebra

3. Current full-time Position

Sept. 2013 — up to now   Senior Scientific Researcher, Faculty of Theoretical Informatics,
                              Department of Mathematics and Mechanics, Lomonosov Moscow State University

 Other Positions:

December 2001 — Sept. 2013   Scientific Researcher, Center of New Information Technologies,
                             Department of Additional Education, Lomonosov Moscow State University
February 2006 — Sept. 2013   Vice Dean in Education, Department of Additional Education,
                             Lomonosov Moscow State University
May 2000 — 31.03.22   Scientific Researcher, Institute of Theoretical and Experimental Physics
Sept. 2007 — up to now   Senior Scientific Researcher, Llc BASIC TECHNOLOGIES

4. Major research interests:
Algebraic Geometry, in particular, theory of Belyi pairs and dessins d'enfants, compactifications of Hurwitz and moduli spaces, stratifications of Hurwitz and moduli spaces; Abstract Algebra; Algebraic Combinatorics; Theoretical Informatics, in particular, computational analysis of non-structured texts in natural languages.

5. Grants and awards:

2017-2021   RSF (Russian Science Foundation), Grant no. 17-11-01124
2015-2017   RFFI (Russian Fond of Basic Researches), Grant no. 15-01-01132
2012-2014   RFFI, Grant no. 12-01-00140a
2010-2012   RFFI, Grant no. 10-01-00709a
2007-2009   RFFI , Grant no. 07-01-00441a
2007-2008   Young Scientist Program, Grant MK-2687.2007.1, PI, 8 members
2006-2008   MinPromNauki Grant NSh-5666.2006.1
2006-2007   Special award of the Institute of Theoretical and Experimental Physics
2005-2006   Young Scientist Program, Grant MK-2643.2005.1, PI, 3 members
2005   Special award of the Institute of Theoretical and Experimental Physics
2003-2005   MinPromNauki Grant NS-1910-2003-01
2003-2004   Young Scientist Program, Grant MK-1265-2003-01, PI, 2 members
2003   Special award of the Institute of Theoretical and Experimental Physics

2002   Special award of the Institute of Theoretical and Experimental Physics

2000-2001 Ph.D. Student Grant of International Soros Science Education Program

          Ph.D. Student Grant of Moscow government

1997-1998 Student Grant of International Soros Science Education Program

1997   Weizmann Institute of Science, Israel

          participant of the Karyn Kupcinet International Summer School

1996   Special scholarship from Moscow government

6. Recent invited addresses:

- Adygeya State University, Maikop, Russia, July 2021, Visiting Professor;

- University of Oslo, Oslo, Norway, April 2019, Visiting Professor;

- University of Madrid, Madrid, Spain, July 2017, Visiting Professor;

- Shanghai University, Shanghai, China, June 2017, June-July 2015, Visiting Professor;

- Embedded Graphs, Russia, St. Petersburg, 27-31.10.2014, Invited speaker;

- University of Constanta, Romania, Constanta, June, July 2014, Visiting Professor;

- 12 international Conference Algebra and Number theory: Modern Problems and Applications, Russia, Tula, 21-25.04.2014, Invited speaker;

- Second International Conference Mathematics in Armenia: Advances and Perspectives, Armenia, Yerevan, 24-31.08.2013, Invited speaker;

- University of Primorska, Slovenia, Koper, June 2013, Visiting Professor;

- University of Lisbon, Portugal, Lisbon, May–June 2012, Visiting Professor;

- Institute of Mathematics, Physics, and Mechanics, Slovenia, Ljubljana, August 2008, June–July 2009, June, 2011, Visiting Professor;

- Max-Plank Institute for Mathematics, Germany, Bonn, February – April 2007, Visitor;

- Institut Mittag-Leffler, Djursholm, Sweden, January – June 2007, Visitor;

- IHÉS, France, Paris, August, 2007, Visitor;

- Max-Plank Institute for Mathematics, Germany, Bonn, July – August 2005, Visitor;

- Workshop on Non-Commutative Geometry in Antwerpen, Belgium, 21-26.11.04, Invited speaker;

- 3rd Meeting of the Project Algebra, Geometria, and Combinatorica, Portugal, Porto, 27.06-01.07.99, Invited speaker;

- Karyn Kupcinet International Science School, Israel, Weizmann Institute of Science, June – August 1997, Visitor.

7. List of Publications

1. A. Guterman, E. Kreines, A. Vlasov, Non-surjective linear transformations of tropical matrices preserving the cyclicity index, Kybernetika, to appear, 2022

2. N.Ya. Amburg, E.M. Kreines, Belyi pairs of the cell decomposition of $\mathcal{L}(\overline{\mathcal{M}^{\mathbb{R}}_{0,5}})$, Fundamental and Applied Mathematics, to appear 2022.

3. A. E. Guterman, E. M. Kreines, N. V. Ostroukhova, Transformations of assembly number for 4-regular graphs, Zapiski POMI, 504 (2021) 21-46.

4. A. Guterman, E. Kreines, and C. Thomassen, Linear transformations of tropical matrices preserving the cyclicity index. Special Matrices, 9(1) (2021), 112-118.

5. M. G. Kreines and E. M. Kreines, Matrix models of texts: Interpretation and experimental verification. Mathematical Models and Computer Simulations, 13(2) (2021), 195209.

6. A. E. Guterman, E. M. Kreines, and N. V. Ostroukhova, Double occurrence words: Their graphs and matrices. Journal of Mathematical Sciences, 249(2) (2020) 139157.

7. M. G. Kreines, E. M. Kreines. Matrix models of texts: Models of text collections. Mathematical Models and Computer Simulations, 12(5) (2020) 779790.

8. M. G. Kreines, E. M. Kreines. Matrix models of texts: Models of texts and content similarity of text documents. Mathematical Models and Computer Simulations, 12(5) (2020) 696705.

9. M. Kreines and E. Kreines. Artificial intelligence tools for business applications: Objective map of science and analysis of texts. In Proceedings of 2019 IEEE 21st Conference on Business Informatics (CBI), pages 445451. IEEE New York, USA, 2019.

10. A.E. Guterman, E.M. Kreines, Q.W. Wang, Monotone linear transformations for matrices over semirings, Journal of Mathematical Sciences (Springer), 233(5) (2018), 675-686.

11. N.Ya. Amburg, E.M. Kreines, G.B. Shabat, Poincare polynomial of a space $\bar{M}_{0,n}(\mathbb{C})$ and the number of points of the space $\bar{M}_{0,n}(\mathbb{F}_q)$, Moscow University Mathematics Bulletin, 72(4) (2017), 154-160.

12. M.G. Kreines, E.M. Kreines, Control Model for the Alignment of the Quality Assessment of Scientific Documents Based on the Analysis of Content-Related Context, Journal of Computer and Systems Sciences International, 55(6) (2016), 938-947.

13. M.G. Kreines, E.M. Kreines, The Control Model for the Selection of Reference Collections Providing the Impartial Assessment of the Quality of Scientific and Technological Publications by Using Bibliometric and Scientometric Indicators, Journal of Computer and Systems Sciences International, 55(5), (2016), 750-766.

14. N.Ya. Amburg, E.M. Kreines, Computation of the first Stiefel-Whitney class of the variety $\overline{\mathcal{M}_{l,\backslash}^{\mathbb{R}}}$, Fundamental and Applied Mathematics, 18(6) (2014), 51-75 [in Russian]. English translation: Journal of Mathematical Sciences (New York), 209 (2) (2015), 192-211.

15. E.M. Kreines, Embedded graphs on Riemann surfaces: theory and applications, Proceedings of 12 international Conference Algebra and Number theory: Modern Problems and Applications, Tula: Tula State Pedagogical University, (2014) 81-82.

16. M.G. Kreines, A.A. Afonin, E.M. Kreines, Objectivity or the magic of numbers, Proceedings of VII-th International Moscow Conference in Operation Research (ORM2013). Moscow, Dorodnytsyn Center, 2 (2013), 133-135 [in Russian].

17. M.G. Kreines, A.A. Afonin, E.M. Kreines, Quality estimation for scientific and technical documents based on computational analysis of semantic models of texts on natural languages, Informatization of education and science, 4(20) (2013) [in Russian].

18. E.M. Kreines, Advanced Educational Mathematics, Distant Course for School Teachers, MSU, Dept.Add.Edu, 2013 [in Russian].

19. E. Kreines, Belyi pairs and anti-Vandermonde systems of equations, The 2012 Haifa matrix theory conference, 22. Haifa: Technion — Israel Institute of Technology. 2012

20. E.M. Kreines, Advanced Educational Mathematics — 3, Problem Book for Distant Mathematical course for 2nd grade pupils, MSU, Dept.Add.Edu, 2012 [in Russian].

21. E.M. Kreines, Grothendieck dessins d'enfants over finite fields, Finite fields and their Applications, Ghent: University of Ghent, 2011, 61-62.

22. E.M.Kreines, Grothendieck dessins d'enfants and anti-Vandermonde systems of equations, Workshop in Linear Algebra, Proceedings, Ljubljana: IMFM, 2011, 25.

23. N.Ya. Amburg, E.M. Kreines, Generalized dessins d'enants and compactifications of the moduli space $M_{g,n}$, preprint, 2010.

24. E.M. Kreines, Advanced Educational Mathematics — 2, Problem Book for Distant Mathematical course for 2nd grade pupils, MSU, Dept.Add.Edu, 2010 [in Russian].

25. N.M. Adrianov, N.Ya. Amburg, V.A. Dremov, Yu.A. Levitskaya, E.M. Kreines, Yu.Yu. Kochetkov, V.F. Nasretdinova, G.B. Shabat, Catalog of dessins d'enfants with ≤ 4 edges, Journal of Mathematical Sciences (New-York), 158(1) (2009), 22-80.

26. E. M. Kreines, Equations determining Belyi pairs, with applications to anti-Vandermonde systems, Journal of Mathematical Sciences (New-York), 155(6) (2008), 859-871.

27. G. B. Shabat, E. M. Kreines, N. M. Adrianov, N. Ya. Amburg, V. A. Dremov, Yu. A. Levitskaya. Grothendieck graphs (dessins d'enfants), part I, Distant special course, Dept.Add.Edu, Moscow State University (MSU), 2008.

28. N.M. Adrianov, N.Ya. Amburg, V.A. Dremov, Yu.A. Levitskaya, E.M. Kreines, Yu.Yu. Kochetkov, V.F. Nasretdinova, G.B. Shabat, Catalog od dessins d'enfants with ≤ 4 edges, arXiv:0710.2658v1 [math.AG]

29. E.M. Kreines, Equations determining Belyi pairs, with applications to anti-Vandermonde systems, Fundamental and Applied Mathematics, 13(4), 2007, 95-112 [in Russian]

30. E.M. Kreines, Dessins d'enfants: equations determining Belyi pairs and their solutions, Preprint. Institut Mittag-Leffler, Sweden, 42, 2006/2007

31. E.M. Kreines, Equations determining Belyi pairs, with applications to anti-Vandermonde systems, Preprint. IHES, France, M/06/44

32. N.M. Adrianov, E.M. Kreines, G.B. Shabat, Dessins d'enfants, Encyclopedia of Mathematics, Kluwer, 2005, ed.: M. Hazewinkel

33. A.N. Ilyina, E.M. Kreines, A.V. Mikhalev, G.B. Shabat, Bigraphs and dessins d'enfants, Chebyshevskii Sbornik, 6(4), 2005, 108-118 [in Russian]

34. N.Ya. Amburg, E.M. Kreines, G.B. Shabat, Parasitical solutions of systems of equations determining Belyi pairs for plane trees, Vestnik Mosk. Universiteta, 2004(1), 20-25

35. E. Kreines, On families of geometric parasitic solutions for Belyi systems of genus zero, Fundamental and Applied Mathematics, 9(1), 2003, 103-111 [in Russian], translation in Journal of Mathematical Sciences (New York), 128(6), 2005, 3396-3401

36. E.M. Kreines, Parasitic solutions on systems of equations on Belyi functions in Hurwitz spaces, Uspehi Mat. Nauk. 56(6), 2001, 155-156

37. E.Kreines Some series of plane graphs, Mathematical Methods and Applications, MSSU, 8, 2001, 85-89 [in Russian]

38. E.Kreines, Multiplicities and Parasitic Solutions of Systems of Equations Determining Plane Graphs, Mathematical Methods and Applications, MSSU, 7, 2000, 57-61 [in Russian]

39. E.Kreines, Belyi functions related to plane graphs: Multiplicities and parasitic solutions, Formal Power Series and Algebraic Combinatorics, Shpringer-Verlag, Berlin, 2000, 468-476

40. E.M.Kreines, G.B.Shabat, On the parasitic solutions on Belyi functions, Fundamental and Applied Mathematics, 6(3), 2000, 789-792 [in Russian]

41. Guterman A., Kreines E. Ph. Hall type theorems for modules. Universal Algebra and its Applications. Volgograd. 2000. 60-72

42. Kreines Elena, Appendix to the paper by Dr. Amnon Yekutieli "Dualizing Complexes, Morita Equivalence and the Derived Picard Group of a Ring", J. London Math. Soc., V. 60, 1999, pp.744-746

43. A.Guterman, E.Kreines, P.Hall's theorem on transversals for modules, Fundamental and applied mathematics, 5(1), 1999, pp.119-130 [in Russian]

44. E.Kreines, On the stratification of polinomials by critical values Mathematical Methods and Applications, MSSU, 6, 1999, 63-67 [in Russian]

45. Kreines E. Critical stratification of polynomial spaces and Shabat polynomials. Paul Erdos and His Mathematics. Budapest: DICO & CO Ltd. 1999. P. 145-148.

46. A.E. Guterman, E.M. Kreines, A.V. Mikhalev, Frobenius type results for matrices over the skew-fields, Mathematical Methods and Applications, MSSU, 5, 1998, 119-132 [in Russian]

47. A.Guterman, E.Kreines, The theorems of Frobenius type for matrices over division rings, Proceedings of the Conference "Lomonosov-97", 1997, pp.32-36 [in Russian]

48. A.Guterman, E.Kreines, Matching of semisimple modules, Proceedings of the Conference "Lomonosov-97", 1997, pp.36-39 [in Russian]

8. Deputy Head of Curriculum Review of mathematics in

- Development of the transition from a 5 year to a 6 year university program in Mathematics (2010–2013)

- Review of the Federal Educational Standard in line with the Bologna process (2009–2012)

- Development of the Lomonosov Moscow State University Educational Standard for Ph.D. programs (2019-2020)

- Development of Master program: Digital Technologies and Artificial Intelligence (2020–2021)

9. Education Programs developed:

- Mathematics for humanitarians

- How to teach mathematics for humanitarian specialties (for lecturers)

- Developing mathematics (for children and kids)

- Additional education for school teachers in Developing mathematics

- Mathematics in psychology and pedagogy

- System analysis of semi-structured problems

- Introduction to business consulting, design and implementation of corporate management systems

- High-effective programming

- Mathematical methods in software development

- Theoretical informatics

- Additional chapters of linear algebra for artificial intelligence programs.

10. Courses delivered:

- Introduction to algebra,

- General algebra,

- Linear algebra,

- Graphs and Matrices,

- Grothendieck graphs (dessins d'enfants),

- Compactification of the moduli spaces and graphs on Riemann surfaces,

- Complex analysis,

- Mathematical education in preliminary school.

11. Other activities:
Member of the Moscow Mathematical Society since 2009
Co-chair of the seminar "Graphs on surfaces and curves over number fields" since 2004