CURRICULUM VITAE

ALEXEY I. ZOBNIN

Personal information

Date of birth:	September 3, 1982
Place of birth:	Moscow, Russia
Citizenship:	Russia
Family:	married, one child
E-mail:	Alexey.Zobnin@gmail.com

Education and academic degrees

2007 Ph. D. in mathematics at Moscow State University,
Faculty of Mechanics and Mathematics, Russia
Thesis title: *Admissible Orderings and Finiteness Criteria for Differential Standard Bases*
Thesis advisor: Prof. E. V. Pankratiev.

2004 Specialist Degree (covers B.S.) with honors in Mathematics and Applied Mathematics,
Moscow State University, Faculty of Mechanics and Mathematics, Russia
Final year thesis title: *Standard Bases in Rings of Differential Polynomials*;
Thesis advisor: Professor E. V. Pankratiev.

Experience

since 2009 **Programmer, team lead**, Yandex,
Department of linguistic technologies, Group of morphology.

since 2008 **Lecturer**, Yandex School of Data Analysis
(courses "Programming in C++ and Python" and "Natural Language Processing").

since 2005 **Associate professor**, Chair of Higher Algebra,
Faculty of Mechanics and Mathematics, Moscow State University.

2002–2009 **Teacher** of mathematics and informatics,
School 1515, Moscow.

2003–2009 **Programmer**, Vinogradov Institute of Russian language
of Russian Academy of Sciences, Moscow.

2003–2005 **Assistant**, Laboratory of Computational Methods,
Faculty of Mechanics and Mathematics, Moscow State University.

Research interests

Computer algebra, Gröbner bases, differential algebra.

Programming skills

C++, C, Python, C#.

Languages

Russian (native), English (fluent), French (intermediate).

Teaching experience

- Algebra, Linear algebra and geometry, Algebra-3 (seminars, Moscow State University)
- Computer algebra practicum (Moscow State University)
- Gröbner Bases and Differential Algebra (Moscow State University)
- Programming in C++ and Python (Yandex School of Data Analysis)
- Natural Language Processing (Yandex School of Data Analysis)

International conferences and invited talks

2014 International Conference on Computational Linguistics Dialogue-2014, Bekasovo, Russia
2014 Polynomial Computer Algebra, PCA-2014, St.-Petersburg, Russia
2013 Mathematical Modeling and Computational Physics, Dubna, Russia
2011 Polynomial Computer Algebra, PCA-2011, St.-Petersburg, Russia
2009 Computer Algebra and Differential Equations, CADE-2009, Pamplona, Spain
2009 International Conference on Computational Linguistics Dialogue-2009, Bekasovo, Russia
2009 Polynomial Computer Algebra, PCA-2009, St.-Petersburg, Russia
2008 El'Manuscript-08, Kazan, Russia
2008 International Algebraic Conference, Moscow, Russia
2008 Polynomial Computer Algebra, PCA-2008, St.-Petersburg, Russia
2008 Differential Algebra and Related Computer Algebra, Catania, Italy
2007 Computer Algebra and Differential Equations, CADE-2007, Turku, Finland
2006 El'Manuscript-06, Izhevsk, Russia
2006 Special Semester on Gröbner Bases, Linz, Austria
2005 Symposium on Symbolic and Algebraic Computation, ISSAC-2005, Beijing, China
2004 Computer Algebra in Scientific Computing, CASC-2004, St.-Petersburg, Russia
2004 International Algebraic Conference, Moscow, Russia
2004 Conference for Young Algebraists (CYA 19, AAA 66), Potsdam, Germany
2003 Conference for Young Algebraists (CYA 18, AAA 65), Potsdam, Germany
2002 Computer Algebra in Scientific Computing, CASC-2002, Yalta, Ukraine

Visits

2014, June Scott Meyers' training "An Overview of the New C++", Moscow, Russia
2012, March Max Plank Institute for Mathematics, Bonn, Germany
2010, October Bjarne Stroustrup's training on C++, Moscow, Russia
2010, August Microsoft Data Structures and Algorithms School, St.-Petersburg, Russia
2005, April Microsoft Academic Days, Moscow, Russia
2002, June Summer school on Cryptology, Joseph Fourier University, Grenoble, France

Research grants participation

Russian Foundation of Basic Research grants 05-01-00671-a, 02-01-01033-a, 11-01-00341-a, 11-01-00794-a.

Refereed articles

[1] А. И. Зобнин, М. А. Лимонов. *Алгоритм проверки тривиальности «смешанных» идеалов в кольце дифференциальных многочленов.* «Программирование», № 2, стр. 18–25 (2015). Translation: A. I. Zobnin, M. A. Limonov. *Algorithm for checking triviality of "mixed" ideals in the ring of differential polynomials.* Programming and Computer Software, vol. 41, no. 2, pp. 84–89 (2015).

[2] Зобнин А. *Антифробениусовы алгебры и ассоциативное уравнение Янга-Бакстера.* «Математическое моделирование», том 26, № 11, стр. 51–56 (2014); arXiv:1310.1193.

[3] Зеленков Ю. Г., Зобнин А. И., Маслов М. Ю., Титов В. А. *Илья Сегалович и развитие идей компьютерной лингвистики в Яндексе.* Материалы международной конференции по компьютерной лингвистике «Диалог-2014», стр. 775–786 (2014).

[4] Зобнин А. *Обобщение алгоритма F5 вычисления базиса Грёбнера полиномиальных идеалов.* Программирование, № 2, стр. 21–30 (2010). Translation: Zobnin A.: *Generalization of the F5 algorithm for calculating Gröbner bases for polynomial ideals.* Programming and Computer Software, vol. 36, no. 2, pp. 75–82 (2010).

[5] Зобнин А. И.: *Дифференциальные стандартные базисы при обратных лексикографических упорядочениях.* Фундаментальная и прикладная математика, том 14, выпуск 4, стр. 121–135 (2008). Translation: Zobnin A. I.: *One-element differential standard bases with respect to inverse lexicographical orderings.* Journal of Mathematical Sciences, vol. 163, no. 5, pp. 523–533 (2009).

[6] Зобнин А. И.: *Поведение дифференциальных стандартных базисов при композиции.* Фундаментальная и прикладная математика, том 13, выпуск 1, стр. 109–134 (2007). Translation: Zobnin A. I.: *Differential standard bases under composition.* Journal of Mathematical Sciences, vol. 152, no. 4, pp. 522–539 (2008).

[7] Зобнин А. И., Кондратьева М. В.: *Задача принадлежности для дифференциальных идеалов, порожденных композицией многочленов.* Программирование, № 32 (3), стр. 3–9 (2006).
Translation: Kondratieva M.V., Zobnin A.I.: *Membership Problem for Differential Ideals Generated by a Composition of Polynomials.* Programming and Computer Software, vol. 32, no. 3, pp. 123–127 (2006).

[8] Zobnin A.: *Admissible Orderings and Finiteness Criteria for Differential Standard Bases.* In Proceedings of International Symposium on Symbolic and Algebraic Computation (ISSAC-2005), July 24–27, Beijing, China, pp. 365–372 (2005).

[9] Zobnin A.: *On Testing the Membership to Differential Ideals.* In Proceedings of the 7th International Workshop on Computer Algebra in Scientific Computing (CASC-2004), July 12–19, 2004, St. Petersburg, Russia, pp. 485–496 (2004).

[10] Зобнин А.: *Обобщенная редукция в кольце дифференциальных многочленов.* Программирование, № 30 (2), стр. 42–50 (2004).
Translation: Zobnin A.: *Generalized Reduction in Rings of Differential Polynomials.* Programming and Computer Software, vol. 30, no. 2, pp. 88–94 (2004).

[11] Zobnin A.: *Essential Properties of Admissible Orderings and Rankings.* Contributions to General Algebra 14, pp. 205–221 (2004).

[12] Зобнин А.: *О стандартных базисах в кольце дифференциальных многочленов.* Фундаментальная и прикладная математика, том 9, вып. 3, стр. 89–102 (2003).
Translation: Zobnin A. I.: *On Standard Bases in Rings of Differential Polynomials.* Journal of Mathematical Sciences, vol. 135, no. 5 (2006).

Books

[1] А. Голубков, А. Зобнин, О. Соколова. *Компьютерная алгебра в системе Sage. Учебное пособие.* Издательство МГТУ им. Баумана, Москва, 2013, 80 стр.

[2] И. В. Аржанцев и др. *Студенческие олимпиады по алгебре на мехмате МГУ, 2006-2011.* Москва, МЦНМО, 2012, 68 стр.

[3] В. А. Артамонов и др. *Сборник задач по алгебре.* Под ред. А. И. Кострикина. Новое издание: Москва, МЦНМО, 2009, 408 стр.

Conference proceedings and other articles

[1] А. И. Зобнин, Г. В. Носырев. *Морфологический анализатор Mystem 3.0.* Принято к публикации в сборнике «Национальный корпус русского языка: 2012–2014», 2014.

[2] V. V. Sokolov, A. I. Zobnin. *GL_m-adjoint invariant Poisson brackets on matrix variables.* In Proceedings of International Conference on Polynomial Computer Algebra, PCA-2014, St.-Petersburg.

[3] A. I. Zobnin. *Kolchin differential ideals generated by a first-order polynomial.* In Proceedings of International Conference on Polynomial Computer Algebra, PCA-2011, St.-Petersburg.

[4] M. V. Kondratieva, A. I. Zobnin. *Some properties of ordinary differential polynomials.* In Proceedings of International Conference on Polynomial Computer Algebra, PCA-2009, St.-Petersburg.

[5] A. I. Zobnin. *Differential polynomials and standard bases.* In Proceedings of International Conference on Computer Algebra and Differential Equations, CADE-2009, Pamplona, Spain.

[6] А. И. Зобнин, А. В. Сахарова. *Универсальная система разметки текста ObjectATE*. Материалы международной конференции по компьютерной лингвистике «Диалог-2009».
[7] Zobnin A.: *Some Results on Differential Grobner Bases*. In Proceedings of A3L-2005 (Conference in Honor of the 60th Birthday of Volker Weispfenning), April 3–6, Passau, Germany, pp. 309–314 (2005).
[8] Ovchinnikov A., Zobnin A., *Classification and Applications of Monomial Orderings and the Properties of Differential Orderings*. In Proceedings of the 5th International Workshop on Computer Algebra in Scientific Computing (CASC-2002), September 22–27, 2002, Yalta, Ukraine, pp. 237–252 (2002).
[9] Mityunin V., Semenov A., Ovchinnikov A., Zobnin A.: *Involutive and Classical Groebner Bases Construction from the Computational Viewpoint*. In Proceedings of the International Workshop on Computer Algebra and its Application to Physics (CAAP-2001), Dubna, Russia, pp. 221–230 (2002).