

Curriculum Vitae

ALEX GAVRYUSHKIN

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Contacts

Address: Centre for Computational Evolution
The University of Auckland
Private Bag 92019
Auckland 1142, New Zealand

Office: Science Centre 303.367

Phone: +64 9 373 7599 ext. 85506

Homepage: <http://alex.gavruskin.com>

Email: a.gavruskin@auckland.ac.nz

Education

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|------|-----------------------|---|
| 2009 | Ph. D. in Mathematics | from Sobolev Institute of Mathematics, Novosibirsk Thesis advisor: Professor Sergei S. Goncharov |
| 2006 | M. S. in Mathematics | from Novosibirsk State University (with First Class Honors) |
| 2004 | B. S. in Mathematics | from Novosibirsk State University (with First Class Honors) |

Professional Activity

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|-----------|---------------|-------------------------|---|
| February | 2012–present | Research Fellow | The University of Auckland (NZ) Department of Computer Science |
| February | 2015–present | Affiliate | Fred Hutchinson Cancer Research Center (US) Computational Biology Program |
| January | 2016–June | 2016 Short-term visitor | Simons Institute for the Theory of Computing UC Berkeley (US) |
| August | 2013–July | 2014 Lecturer | Auckland University of Technology (NZ) School of Computer and Mathematical Sciences |
| November | 2012–June | 2013 Research Visitor | National University of Singapore School of Computing |
| September | 2009–December | 2014 Senior Lecturer | Irkutsk State University (RF) Institute of Mathematics, Economics, and Computer Science |
| September | 2009–November | 2009 Research Visitor | University of Notre Dame (US) Department of Mathematics |
| April | 2009–August | 2009 Research Assistant | Sobolev Institute of Mathematics (RF) |
| September | 2006–July | 2009 GTA | Novosibirsk State University (RF) |

Awards

- 2011 Dr of Science Scholarship for three years
- 2009 Siberian Fund for Algebra and Logic Award (2005–2009)
- 2008 Award for excellence in teaching (at ACM-ICPC North-Eastern European Regional Contest)
- 2007 Siberian Mathematical Journal Award (from Sobolev Institute of Mathematics)
- 2006 Best Student Scientific Work Award (from Novosibirsk State University)
- 2005 Maltsev Award (from Novosibirsk State University)

Publications

- A. Gavryushkin and A. Drummond. The space of ultrametric phylogenetic trees. *Journal of Theoretical Biology*, DOI 10.1016/j.jtbi.2016.05.001, 2016.
Available at [arXiv:1410.3544](https://arxiv.org/abs/1410.3544). Software: <https://github.com/gavruskin/tauGeodesic>
- C. Zeidler, A. Gavryushkin, C. Lutteroth, and G. Weber. Tiling algebra for constraint-based layout editing. *Journal of Logical and Algebraic Methods in Programming*, accepted.
- A. Gavryushkin, B. Khoussainov, M. Kokho, and J. Liu. Dynamic algorithms for multemachine interval scheduling through analysis of idle intervals. *Algorithmica*, DOI 10.1007/s00453-016-0148-5, 2016.
- T. Stadler, T. Vaughan, A. Gavryushkin, S. Guindon, D. Kühnert, G.E. Leventhal, and A. Drummond. How well can the exponential-growth coalescent approximate constant-rate birth-death population dynamics? *Proceedings of the Royal Society B: Biological Sciences*, 282, 1806, 2015.
- P. Gavryushkin, Z. Popov, K. Litasov, and A. Gavryushkin. Unbiased crystal structure prediction of NiSi under high pressure. *Journal of Applied Crystallography*, 48, 3, 906–908, 2015.
- A. Gavryushkin, B. Khoussainov, and F. Stephan. Reducibilities among equivalence relations induced by recursively enumerable structures. *Theoretical Computer Science*, Vol. 612, 137–152, 2015.
- A. Gavryushkin. Decidable models of small theories. *Lobachevskii Journal of Mathematics*, 36, 4, 446–449, 2015.
- A. Gavryushkin, B. Khoussainov, M. Kokho, and J. Liu. Dynamic algorithms for monotonic interval scheduling problem. *Theoretical Computer Science*, Vol. 562, 227–242, 2014.
- A. Gavryushkin and A. Nies. Universality for left-computably enumerable metric spaces. *Lobachevskii Journal of Mathematics*, 35, 4, 292–294, 2014.
- A. Gavryushkin, B. Khoussainov, M. Kokho, and J. Liu. Dynamic interval scheduling for multiple machines. *ISAAC 2014, Springer LNCS*, Vol. 8889, 235–246, 2014.

- A. Gavryushkin, S. Jain, B. Khoussainov, and F. Stephan. Graphs realised by r.e. equivalence relations. *Annals of Pure and Applied Logic*, 165, 7, 1263–1290, 2014.
- A. Gavryushkin, B. Khoussainov, M. Kokho, and J. Liu. Dynamising interval scheduling: the monotonic case. *IWOCA 2013, Springer LNCS*, Vol. 8288, 178–189, 2013.
- A. Gavryushkin and B. Khoussainov. On decidable and computable models of theories. *CiE 2013, Springer LNCS*, Vol. 7921, 200–209, 2013.
- A. Gavryushkin. On constructive models of theories with linear Rudin-Keisler ordering. *Journal of Logic and Computation*, 22, 4, 793–805, 2012.
- A. Gavryushkin. Computable models of Ehrenfeucht theories. *CRM Documents*, Centre de Recerca Matemàtica, Bellaterra (Barcelona), Vol. 11, 67–77, 2012.
- A. Gavryushkin. A new spectrum of computable models. *Bulletin of ISU. Series: mathematics*, 4, 4, 7–20, 2010.
- A. Gavryushkin. Computable limit models. *Programs, Proofs, Processes—CiE*, 188–193, 2010.
- A. Gavryushkin. Computable limit models for Ehrenfeucht theories. *Bulletin of ISU. Series: mathematics*, 3, 2, 56–61, 2009.
- A. Gavryushkin. Computable models of theories with linear Rudin-Keisler ordering. *Bulletin of NSU. Series: mathematics, mechanics, informatics*, 9, 2, 30–37, 2009.
- A. Gavryushkin. Spectra of computable models for Ehrenfeucht theories. *Algebra and Logic*, 46, 3, 149–157, 2007.
- A. Gavryushkin. On complexity of Ehrenfeucht theories with computable model. *Logical Approaches to Computational Barriers—CiE*, 105–108, 2006.
- A. Gavryushkin. Complexity of Ehrenfeucht models. *Algebra and Logic*, 45, 5, 289–295, 2006.

Invited Talks

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|----------|------|---|----------------------|
| November | 2015 | <i>Computational Biology Group Seminar</i> at ETH—Zürich | Seminar talk |
| February | 2015 | <i>Matsen Group Seminar</i> at Fred Hutchinson Cancer Research Center | Seminar talk |
| February | 2015 | <i>Workshop on Networks of Life</i> at the University of Canterbury | Workshop talk |
| June | 2014 | <i>Algebra and Mathematical Logic: Theory and Applications</i> in Kazan | Special session talk |
| November | 2013 | <i>Randomness Workshop</i> at the University of Auckland | Workshop talk |

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| November | 2012 | National University of Singapore | Seminar talk |
| March | 2012 | Auckland University of Technology | Seminar talk |
| October | 2011 | <i>Maltsev Meeting</i> in Novosibirsk | Plenary talk |
| October | 2011 | <i>Logic Seminar</i> at Cornell University | Seminar talk |
| September | 2011 | <i>Southern Wisconsin Logic Colloquium</i> University of Wisconsin—Madison | Seminar talk |
| November | 2009 | <i>Computational Logic Seminar</i> at CUNY Graduate Center | Seminar talk |
| October | 2009 | <i>Logic Seminar</i> at Cornell University | Seminar talk |
| October | 2009 | <i>Logic Seminar</i> at the University of Notre Dame | Seminar talk |
| November | 2007 | <i>Maltsev Meeting</i> in Novosibirsk | Plenary talk |
| September | 2006 | <i>Algebra and Logic Seminar</i> at Novosibirsk State University | Seminar talk |
| June | 2005 | <i>Joint Seminar on Constructive Models</i> Notre Dame and Novosibirsk Universities | Seminar talk |
| November | 2004 | <i>Algebra and Logic Seminar</i> at Novosibirsk State University | Seminar talk |

Contributed Talks

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|----------|------|---|-----------------------|
| February | 2016 | <i>Computational Cancer Biology</i> at University of California, Berkeley | Participant |
| October | 2015 | <i>Alan Wilson Center Annual Meeting</i> at Massey University | Long talk |
| February | 2015 | <i>The Interface of Mathematics and Biology</i> <i>NZ Phylogenomics Meeting</i> in Dunedin | Long talk |
| February | 2014 | <i>Workshop on Networks of Life</i> at the University of Canterbury | Participant |
| June | 2013 | <i>Mathematical and Computational</i> <i>Evolutionary Biology</i> in Montpellier | Participant |
| July | 2013 | <i>Computability in Europe</i> in Milan | Two contributed talks |
| July | 2011 | <i>Infinity Conference</i> in Barcelona | Contributed talk |
| July | 2011 | <i>Logic Colloquium</i> in Barcelona | Contributed talk |
| July | 2010 | <i>Logic Colloquium</i> in Paris | Contributed talk |
| June | 2010 | <i>Computability in Europe</i> in Azores | Contributed talk |
| May | 2010 | <i>Maltsev Meeting</i> in Novosibirsk | Contributed talk |
| August | 2009 | <i>Logic Colloquium</i> in Sofia | Contributed talk |
| June | 2008 | <i>Computability in Europe</i> in Athens | Contributed talk |
| July | 2007 | <i>Logic Colloquium</i> in Wroclaw | Contributed talk |
| July | 2006 | <i>Computability in Europe</i> in Swansea | Contributed talk |

Grants

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| 2012–2013 | Associate Investigator of an FRDF grant from the University of Auckland Contract # 2795185 for \$200,000 |
| 2011–2013 | Principal Investigator and Coordinator of a Russian Government Grant Contract # 16.740.11.0567 for US\$50,000 |
| 2010–2012 | Principal Investigator and Coordinator of a Russian Government Grant Contract # II1227 for US\$65,000 |
| 2006–2010 | Participant of a Russian Fund for Fundamental Research Grant |
| 2003–2009 | Participant of a Russian President Grant |

Travel Grants

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| 2012–2013 | School of Computing, National University of Singapore |
| 2011 | University of Chicago, University of Wisconsin–Madison, and Cornell University |
| 2011 | Participation in the Logic Colloquium 2011 |
| 2010 | Participation in the Logic Colloquium 2010 |
| 2010 | Participation in the Computability in Europe 2010 |
| 2009 | University of Notre Dame, Cornell University, and NYC University |
| 2009 | Participation in the Logic Colloquium 2009 |
| 2008 | Participation in the Computability in Europe 2008 |
| 2008 | Participation in the Summer School Marktoberdorf 2008 |
| 2007 | Participation in the Logic Colloquium 2007 |
| 2006 | Participation in the Computability in Europe 2006 |

Students

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| 2015–2016 | Lena Collienne | Intern | The University of Auckland (University of Greifswald) |
| 2015–2016 | Edwardo Reynolds | Intern | The University of Auckland |

Teaching

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|-----------|------------------------------|---|
| 2012–2014 | The University of Auckland | Discrete Structures in Maths and CS (CompSci 225) |
| 2013–2014 | Auckland U of Technology | Engineering Mathematics I and II (715001/716001) |
| 2013–2013 | Auckland U of Technology | Finite Mathematics (715205) |
| 2012–2012 | Auckland U of Technology | Theory of Computation (717300) |
| 2012–2012 | The University of Auckland | Software Engineering Theory (SoftEng 211) |
| 2010–2011 | Irkutsk State University | Computable Model Theory |
| 2009–2010 | Irkutsk State University | Model Theory |
| 2009–2011 | Irkutsk State University | Mathematical Logic |
| 2010–2011 | Irkutsk State University | Discrete Mathematics |
| 2009–2010 | Irkutsk State University | Theory of Computation |
| 2006–2009 | Novosibirsk State University | Theory of Algorithms |
| 2007–2009 | Novosibirsk State University | Theoretical Programming |
| 2007–2009 | Novosibirsk State University | Mathematical Logic |
| 2007–2008 | Novosibirsk State University | Number Theory |

Professional Affiliation

2016 Society of Systematic Biologists Member

Service to Department and University

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|------|---|--------------------------------------|
| 2013 | Auckland–Novosibirsk Workshop on Algebra, Logic, Geometry, and Combinatorics | Co-Chair of the Program Committee |
| 2009 | Maltsev Meeting | Organizing Committee |
| 2007 | Mathematics in the Modern World | Organizing Committee |
| 2007 | Domains VIII and Computability Over Continuous Data Types | Organizing Committee |
| 2005 | Asian Logic Conference | Organizing Committee |

I am a regular reviewer for *AMS Mathematical Reviews* and a referee for such journals and conferences as

- *Genome Biology and Evolution*
- *Journal of Mathematical Biology*
- *LICS Symposium*

Up-to-date full CV: <https://gavruskin.github.io/AGcv.pdf>

Up-to-date short CV: https://gavruskin.github.io/AGcv_short.pdf