

Alexander Knop

Curriculum Vitae

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General

Name Alexander Knop
Place of birth Saint Petersburg, Russia
Date of birth 06 Mar 1991

Education

2008–2013 **Master in Mathematics**, Saint Petersburg State University, St. Petersburg
2013 – 2016 **Ph.D in Mathematics**, St. Petersburg Department of Steklov Mathematical Institute, St. Petersburg
2011–2013 **Advanced Education**, Computer Science Center, St. Petersburg

Master Thesis

Title *Circuit Lower Bounds for Heuristic MA*
Supervisors Edward A. Hirsch

Ph.D Thesis

Title *Complexity of Heuristic Computation and Interactive Protocols*
Supervisors Edward A. Hirsch

Teaching Experience

Sep 2007 – **Teacher**, JUNIOR MATHEMATICAL SCHOOL, St. Petersburg
Jun 2013 Math teacher in mathematical club for talented schoolchildren
Sep 2013 – **Teacher**, SCHOOL NUMBER 533, St. Petersburg
Jun 2015 Algebra and Mathematical Logic courses
Sep 2013 **Teacher Assistant**, ST PETERSBURG ACADEMIC UNIVERSITY, St. Petersburg
Math Logic, Complexity Theory, Algebra, Combinatorics, Expanders and Graph Theory courses

Work Experience

Jun 2008 – **Intern**, DEVEXPERTS, St. Petersburg
Jul 2008 Developing 3D Graph plotter. Duties included developing current release using Java and OpenGL

- Feb 2010 – **Developer**, YANDEX, St. Petersburg
Sep 2010 Developing of robots for semi-automatic extraction of information and framework for it. Duties included developing current release using Java and supporting of existing robots.
- Sep 2013– **Developer**, GGA SOFTWARE, St. Petersburg
Jul 2014 Developing software for drug discovery robots. Duties included developing current release using Java.

Talks

- Oct 1 – Nov 10 2012 Leonhard-Euler Scholarship Programme, St. Petersburg School in Probability and Statistical Physics, Bielefeld, Germany
- Feb 26 – Mar 2, 2012 17th Estonian Winter School in Computer Science (EWSCS'2012), Palmse, Estonia
- Feb 2 – Feb 9 2012 Winter School in Mathematics of Higher School of Economics, Moscow, Russia
- Jun 21 – Jun 23, 2013 Franco-Russian workshop on Algorithms, complexity and applications, Moscow, Russia
- Jun 29 – Jul 01, 2013 CSEDays 2013, Ekaterinburg, Russia
- Sep 23 – Sep 27, 2013 Eighth International Conference on Computability, Complexity and Randomness, Moscow, Russia
- Mar 1 – Mar 6, 2015 20th Estonian Winter School in Computer Science (EWSCS'2015), Palmse, Estonia
- Jul 13 – Jul 17, 2015 The 10th International Computer Science Symposium in Russia (CSR'2015), Listvyanka, Russia
- Dec 9 – Dec 11, 2015 The 26th International Symposium on Algorithms and Computation (ISAAC 2015), Nagoya, Japan
- Dec 3, 2015 ELC Mini Workshop, Tokyo, Japan
- Aug 22 – Aug 26, 2016 41st International Symposium on Mathematical Foundations of Computer Science (MFCS 2016), Krakow, Poland
- Dec 12 – Dec 14, 2016 The 27th International Symposium on Algorithms and Computation (ISAAC 2016), Sydney, Australia

Publications

- 2013 Alexander Knop. **Diophantine hierarchy**, Journal of Mathematical Sciences 188(1) (2013), pp. 59–69
- 2015 Alexander Knop. **Circuit Lower Bounds for Average-Case MA**, Proceedings of CSR'15, Lecture Notes in Computer Science Volume 9139, 2015, pp. 283–295
- 2014 Dmitry Itsykson, Alexander Knop, Dmitry Sokolov. **Heuristic time hierarchies via hierarchies for sampling distributions**, ECCC - Electronic Colloquium on Computational Complexity, <http://eccc.hpi-web.de/report/2014/178/>

- 2015 Dmitry Itsykson, Alexander Knop, Dmitry Sokolov. **Heuristic time hierarchies via hierarchies for sampling distributions**, Proceedings of ISAAC'15
- 2015 Dmitry Itsykson, Alexander Knop, Dmitry Sokolov. **Complexity of distributions and average-case hardness**, ECCC - Electronic Colloquium on Computational Complexity, <http://eccc.hpi-web.de/report/2015/174/>
- 2016 Alexander Golovnev, Edward Hirsch, Alexander Knop, Alexander Kulikov. **On the limits of gate elimination**, Proceedings of MFCS'16
- 2016 Dmitry Itsykson, Alexander Knop, Dmitry Sokolov. **Complexity of distributions and average-case hardness**, Proceedings of ISAAC'16
- 2017 Dmitry Itsykson, Alexander Knop, Dmitry Sokolov. **On OBDD based algorithms and proof systems that dynamically change order of variables**, Is going to appear in proceedings of STACS'17

Awards

- 2011 Winner of contest research for students by High School of Economics
- 2012 – 2013 Increased Academic Scholarship
- 2012 – 2013 Computer science center Scholarship
- 2015 – 2016 Rokhlin Scholarship

Languages

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|---------|---------------------------|-------------------------------------|
| Russian | Native speaker | |
| English | Upper-Intermediate | <i>Con conversationally fluent</i> |
| Hebrew | Pre-Intermediate | <i>Con conversationally fluent</i> |
| Spanish | Basic | <i>Basic words and phrases only</i> |