

Alexander Novikov

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Education

- Ph.D. student in Machine Learning, Institute of Numerical Mathematics of the Russian Academy of Sciences, started at 2015.
- M.S. in Computer Science at Lomonosov Moscow State University, graduated in 2015, thesis “Computational method for approximating the partition function of a Markov random field”, advisor: [Dmitry Vetrov](#), Bayesian methods research group. **1st place** award in faculty-wise thesis competition.
- [Microsoft Machine Learning and Intelligence School](#), 2015.
- [Summer School in Information Retrieval](#), 2013.
- [Summer mathematical school](#), 2010.
- Second place in the Lomonosov Informatics Olympiad and third place in the Joint Interuniversity Mathematical Olympiad.
- Finished 10 MOOCs on machine learning, algorithms, writing papers, robotics, statistics, and testing.

Selected publications

- **Novikov A.**, Podoprikin D., Osokin A., Vetrov D., *Tensorizing neural networks. Advances in Neural Information Processing Systems 28 (NIPS)*, 2015 [[arXiv](#), [code](#)]
- Garipov T., Podoprikin D., **Novikov A.**, Vetrov D., *Ultimate tensorization: compressing convolutional and FC layers alike. Learning with Tensors: Why Now and How?*, NIPS-2016 workshop [[arXiv](#), [code](#)]
- **Novikov A.**, Rodomanov A., Osokin A., Vetrov D., *Putting MRFs on a Tensor Train. International Conference on Machine Learning (ICML)*, 2014. **Oral presentation** [[pdf](#), [code](#)]
- **Novikov A.**, Trofimov M., Oseledets I., *Exponential Machines. Advances in non-convex analysis and optimization workshop on ICML-2016*. [[arXiv](#), [code](#)]
- **Novikov A.**, Chernyshov V., Vetrov D., *Particle filter for tracking a TV screen in a video. Intellectualization of information processing (IOI)*, Montenegro, 2012. **Oral presentation.**

Reviews & presentations

- Reviewer for *IEEE Transactions on Neural Networks and Learning Systems* journal, 2016.
- Teaching assistant in “Bayesian methods for machine learning” and “Probabilistic graphical models” courses, Skoltech, 2016.
- Teacher at [Summer mathematical school](#), 2016.
- Gave a tech talk *Tensor Train decomposition and its applications to graphical models*, in the Google headquarter, USA, 2014.
- Minisymposium presentation *Computationally efficient methods for MAP-inference and partition function estimation in MRF in TT format*, at [SIAM Conference on Imaging Science](#), 2014.

Awards

- 1st place (out of 20 teams from 8 countries), Data Science Game, 2015.
- 1st place award, faculty-wise thesis competition, 2015.

Experience

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| • Institute of Numerical Mathematics RAS
Ph.D. student | September 2015 — present |
| • Higher School of Economics
Research intern | September 2016 — present |
| • Skolkovo Institute of Science and Technology
Junior Research Scientist | October 2014 — September 2015 |
| • Google USA, Mountain View, CA
Software Engineering Intern | July 2014 — October 2014 |

Links

- [GitHub](#); the main contributor to [Factorization Machines on TensorFlow](#).
- [LinkedIn](#)

Research interests

- Machine learning;
- Graphical Models;
- Low-rank techniques;
- Neural networks;
- Optimization.