

# SERGEI VOLODIN

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## EDUCATION

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**Moscow Institute of Physics and Technology**, BSc  
Department of Control and Applied Mathematics  
☞ Intellectual Systems and Data Analysis  
GPA: 8.8/10

Sep 2012 – Jun 2017

## RESEARCH INTERESTS

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1. Artificial Intelligence, Machine Learning
2. Mathematical Optimization

## RESEARCH EXPERIENCE

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**Skoltech, Center for Energy Systems**  
*Research Intern*

Sep 2016 – Jul 2017  
*Moscow, Russia*

- Designed and implemented the algorithm for cutting convex parts of the image of a quadratic map
- Examined the structure of the set of nonconvexities in Matlab

**MIPT, chair of Data Analysis**  
*Undergraduate student*

Feb 2016 – Jul 2016  
*Moscow, Russia*

- Compared machine learning algorithms for the ligand-receptor interaction problem
- Implemented Probabilistic Classifier Chains algorithm using scikit-learn library

**MIPT, chair of Theoretical Mechanics**  
*Technician*

Oct 2012 – Feb 2013  
*Moscow, Russia*

- Designed and implemented numerical simulations for Euler's rotation equations
- Checked soundness of the approximation using symbolic computations in Wolfram Mathematica

## PUBLICATIONS

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**Volodin S.**, Popova M., Strijov V. Probabilistic prediction of nuclear receptors biological activity. Proceedings of ITaS, 2016. ☞ PDF

Petrov A., **Volodin S.** Janibekovs effect and the laws of mechanics. Doklady Akademii Nauk, 2013. ☞ PDF

## CONFERENCES

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☞ Information Technologies and Systems (Saint-Petersburg, Repino, 2016), *Speaker*

☞ School “Control, Information, Optimization” (Saint-Petersburg, Repino, 2016), *Poster presenter*

## SKILLS

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Programming: C/C++, Python (numpy, scikit-learn), Matlab, Mathematica, TensorFlow, Theano; AVR C++, x86 assembly, Microsoft SQL

Environment: Git, SVN, Debian Linux

Languages: Russian (native), English (B2)

## SCHOLARSHIPS

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✍ Abramov Fund's scholarship for excellent grades (2014)

## OLYMPIADS AND HACKATHONS

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✍ DeepHack.RL hackathon (Deep RL for Atari games), MIPT, Moscow, Russia, 2017. 4th place

✍ DevCup software development competition, Moscow, Russia, 2013. 2nd place

## WORK EXPERIENCE

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### ITBrat

*Software Engineer*

Jul 2015 – Feb 2016

*Moscow, Russia*

- Developed High Frequency Trading (cross-border arbitrage) application in C++, from initial discussion with the team to deployment and supporting
- Added low-level networking to the project using Solarflare OpenOnload library and hardware
- Designed and supported the environment for the algorithm: build stage, version control, performance analysis using network dumps

### ✍ EscapeControl

*Software Engineer*

Jul 2015 – Feb 2016

*Moscow, Russia*

- Created ✍ system architecture for the real-world escape room games
- Implemented the solution using C++ (Atmel AVR, Linux)
- Created a startup selling software & hardware framework for real-world escape games
- Managed a team of two web developers
- Ten solutions sold, currently running in different countries

## PROJECTS

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### Quadcopter stabilization

- Developed an algorithm in C++ for stabilization of a quadcopter drones
- Conducted the analysis of launches to improve flying quality
- Results were ✍ published in the Habrahabr CS blog

## VOLUNTEERING

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### ✍ Anti-corruption foundation (Alexey Navalny)

- Donator (2015–2017)
- Rally participant (June 2017)
- Agitation volunteer (July 2017)