

# SERGEI VOLODIN

Birth date: 3 October 1994  
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Russia, Moscow

## EDUCATION

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**Moscow Institute of Physics and Technology**, BSc student  
Department of Control and Applied Mathematics,  
sub-department of Intellectual Systems and Data Analysis  
GPA for 7 semesters: 8.98/10

*Sep 2012 – June 2017*

## RESEARCH INTERESTS

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1. Artificial Intelligence
2. Machine Learning
3. Optimization

## RESEARCH EXPERIENCE

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

Sep 2016 – Present  
*Russia, Moscow*

- Worked on the Power Flow Feasibility problem with Assist. Prof. Anatoly Dymarsky and Dr. Elena Gryazina
- Designed (partially) and implemented the algorithm for cutting convex parts of the image in Matlab
- Examined the structure of the set of nonconvexities
- Results: *article expected in 2017*

**MIPT, sub-department of Data Analysis**  
*Student*

Feb 2016 – July 2016  
*Russia, Moscow*

- Worked on the ligand-receptor interaction problem using Machine Learning approach
- Implemented Probabilistic Classifier Chains algorithm using scikit-learn library
- Assessed this method as infeasible for the task
- Results: an article in ITAS proceedings

**MIPT, sub-department of Theoretical Mechanics**  
*Technician*

Oct 2012 – Feb 2013  
*Russia, Moscow*

- Worked on the article “Janibekov’s effect and the laws of mechanics” with A.G. Petrov
- Designed and implemented numerical simulations for Euler’s rotation equations
- Checked correctness of the approximation presented in the article using numerical simulation and symbolic computations in Wolfram Mathematica
- Results: an article in Doklady Akademii Nauk

## PUBLICATIONS

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Probabilistic prediction of nuclear receptors biological activity, **Sergey Volodin**, Maria Popova, Vadim Strijov, ITAS 2016

Janibekovs effect and the laws of mechanics, A.G. Petrov, **S.E. Volodin**, 2013, published in Doklady Akademii Nauk, 2013, Vol. 451, No. 4, pp. 399403.

## CONFERENCES

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Information Technologies and Systems (Saint-Petersburg, Repino, September 2016)

*Speaker*

Eights Traditional school Control, Information, Optimization (Saint-Petersburg, Repino, June 2016)

*Poster presenter*

## SCHOLARSHIPS

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“Abramov fund scholarship” for excellent grades (2014)

## SKILLS

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

Languages: Russian (native), English (B2)

## COURSES

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Getting Started with Deep Learning (NVIDIA Deep Learning Workshop, MIPT, Feb 2017)

Approaches to Object Detection using DIGITS (NVIDIA Deep Learning Workshop, MIPT, Feb 2017)

## OLYMPIADS AND HACKATHONS

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DeepHack.RL hackathon (Deep RL for Atari games), MIPT, 2017. 4'th place (z-score)

Sixteen interuniversity programming olympiad, Vologda, 2013, successful performance

<http://olympiads.vologda-uni.ru/interuni/>

DevCup, Russia, Moscow 2013, 2nd place (with BBC&N team)

<https://vk.com/devcup>

## PROFESSIONAL EXPERIENCE

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### ITBrat

July 2015 – Feb 2016

*Developer*

*Russia, Moscow*

- 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

### Claustrophobia

July 2014 – Feb 2015

*Developer*

*Russia, Moscow*

- Created system architecture for the real-world escape room game
- Implemented the solution using C++ (Atmel AVR, Linux)
- Results description: <https://habrahabr.ru/company/technoworks/blog/258585/> (in Russian)

## HOBBY

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### Quadcopter stabilization

2012 – 2014

- Worked with TechnoWorks team (Arshavir Ter-Gabrielyan and others)
- Developed the algorithm for stabilization a quadcopter drone using C++ (Atmel AVR, Linux)
- Conducted the analysis of launches to improve flying quality
- Results description: <https://habrahabr.ru/company/technoworks/blog/216437/> (in Russian)