Sergei VOLODIN

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Route de la Chocolatière 29 A / 009, Échandens, Switzerland

Birth date: 3rd October 1994 (24 years), Russian

EDUCATION

Swiss Federal Institute of Technology in Lausanne (EPFL)
Lausanne, Switzerland Sep 2017 – June 2020

- Master's degree in Computer Science
- Minor in Computational Neurosciences
- GPA: **5.61**/6

Moscow Institute of Physics and Technology
Moscow, Russia June 2017

- Bachelor's degree im Applied Mathematics
- GPA: **4.84**/5

SKILLS

Team/Project management, research paper writing, data analysis, theory, conducting experiments

Relevant courses: Machine Learning, Software Engineering, Unsupervised and Reinforcement Learning in Neural Networks, Biological modeling of neural networks, Random graph theory, Functional Programming, Set Theory

Relevant courses: Machine Learning (intro), Algorithms and Data Structures, Convex Optimization, Random Processes, Functional Analysis

Scientific programming: Keras, TensorFlow, Theano, scikit-learn, MATLAB, Mathematica, R

Languages: English (TOEFL iBT 112/120), French (beginner), Russian (native)

Programming: C/C++, Python, AVR C++, Scala, Java, nasm, C#

**Frameworks:** Qt/QML, Django, Android Studio, OpenGL/GLSL, Unity 3D

Environment: Git, LATEX, Bash, Debian/Ubuntu Linux

RESEARCH EXPERIENCE

Swiss Federal Institute of Technology in Lausanne (EPFL), Distributed Computing Laboratory Research Assistant
Lausanne, Switzerland Sep 2018 – present

- Improved the probabilistic bound on error of a neural network in case of independent neuron failures
- Conducted experiments to test the improved theory using Keras and Tensorflow

EPFL, Computer-Human Interaction in Learning and Instruction laboratory Research Assistant
Lausanne, Switzerland Sep 2017 – Aug 2018

- Created [☐ a library QML-AR] for seamless augmented reality using OpenCV with competitive performance on Android and small visual negative impact
- Designed an activity for learning math using the library, tested the application in a classroom setting, analyzed the obtained data

Skolkovo Institute of Science and Technology, Center for Energy Systems Research Intern
Moscow, Russia Sep 2016 – Jul 2017

- Characterized using numerical optimization and theoretically the structure of the set of boundary non-convexities of an image of a quadratic map in case the number of non-convexities is infinite
- Designed and implemented [☐ the Convexity Analysis of Quadratic Maps library] which gives approximate solutions to a number of problems involving quadratic maps

PUBLICATIONS

A. Dymarsky, E. Gryazina, **S. Volodin,** B. Polyak.
[☐ Geometry of quadratic maps via convex relaxation].
arXiv:1810.00896, 2018

Volodin S., Popova M., Strijov V. [☐ Probabilistic prediction of nuclear receptors biological activity].
Proceedings of ITaS, 2016, *in Russian*

Petrov A., **Volodin S.** [☐ Janibekov's effect and the laws of mechanics]. Doklady Akademii Nauk, 2013.

WORK EXPERIENCE

[☐ **EscapeControl**] Jul 2015 – Feb 2016
*Own b2b startup for escape rooms, Moscow, Russia*

- Created a startup selling software and hardware for real-world escape room games which allows to speed up the construction and reduce maintenance costs
- Responsible for back-end software engineering, sales and customer support
- Managed a team of two web developers until a successful launch of the web interface
- Sold more than twenty solutions which are currently running in different countries

ITBrat Jul 2015 – Feb 2016
Algorithmic trading startup, Moscow, Russia

- Developed algorithmic trading application from initial discussion with the team to deployment and supporting
- Added low-level user-space networking to the project which allowed to decrease latency and increase profit
- Responsible for the performance of the code

PROJECTS

Quadcopter drone from scratch project 2012 – 2014

- Developed [☐ an algorithm] in C++ for stabilization of a quadcopter drone from scratch using AVR microcontrollers, IMU sensors and PID regulators
- Managed the project consisting of 2-5 developers
- Conducted the analysis of launches to improve flying quality
- Results were published as a [☐ science popular article] *(in Russian)*

SCHOLARSHIPS

[☐ Research Scholars], a paid Research Assistant position, Swiss Federal Institute of Technology in Lausanne (EPFL), 2017 – 2019

[☐ Abramov Fund's] scholarship for excellent grades (2014)

CONFERENCES

[☐ P.A.I.S.S.] (AI Summer School) (INRIA Grenoble, 2018), *participant,* [☐ selected] *to receive financial help*

[☐ DeepBayes] school on Bayesian methods in Deep Learning (Moscow, 2017), *participant*

[☐ Information Technologies and Systems] (Saint-Petersburg, Repino, 2016), *speaker*

OLYMPIADS AND HACKATHONS

[☐ DeepHack.RL] hackathon (Deep Reinforcement Learning for Atari games, used an evolutionary algorithm with an autoencoder to solve Atari games), MIPT, Moscow, Russia, 2017. [☐ 4th place].

RESEARCH INTERESTS

Artificial Intelligence, Machine Learning, Artificial Intelligence Safety, Mathematical Optimization, Robotics

INTERESTS

Effective Altruism, Running (1/2 marathon 2018), Snowboarding, Swimming

VOLUNTEERING

Anti-corruption foundation 2017
A non-profit aimed at investigating corruption, Moscow, Russia

Conveyed the results of the investigations by talking to people on the streets