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Mikhail Usvyatsov

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Github:// Aelphy

Education

Oct 2017 — Present	ETHZ	Zürich, Switzerland

- **PhD** in tensor application for learning on visual data

Sep 2015 — Jul 2017	MIPT - National Research University	Moscow, Russia

- **MSc** in Computer Science. GPA: 4.75 / 5.0
- Coursework: Linux Kernel Development, Windows Kernel Development

Sep 2015 — Jun 2017	Skoltech	Moscow, Russia

- **MSc** in Computer Science. GPA: 4.57 / 5.0
- Coursework: Numerical Linear Algebra, Bayesian Methods, Optimization Methods, Neural Networks, Machine Learning

Sep 2014 — Jun 2015	Innopolis University	Kazan, Russia

- **BSc** in Computer Science, 2015. GPA: 4.92 / 5.0

Sep 2010 — Jul 2014	Ural Federal University	Yekaterinburg, Russia

- **BSc** in Electrical Engineering, 2014. GPA: 4.96 / 5.0

Awards

2017	Awarded	Diploma with honors, Moscow Institute of Physics and Technology
2014	Awarded	Diploma with honors, Ural Federal University
2012	Finalist	Russian Math Olympiad
2011	Finalist	Russian Math Olympiad
2010	Winner	Student Math Olympiad, Ural Federal University

Publications

- Borisyak M., **Usvyatsov M.**, Mulhearn M., Shimmin C., Ustuzhanin A. Muon trigger for mobile phones. Journal of Physics: Conference Series, 2017
- Hackel T., **Usvyatsov M.**, Galliani S., Wegner J.D., Schindler K. Inference, Learning and Attention Mechanisms that Exploit and Preserve Sparsity in Convolutional Networks. IJCV, 2020
- **Usvyatsov M.**, Schindler K. Visual recognition in the wild by sampling deep similarity functions. ICRA 2019

Summer Schools & Hackhathons

Oct 2019	**"Brainhack"** Worked on classifying raw EEG data. Python, Pytorch.	**ETHZ** (Zürich, Switzerland)
Aug 2017	**"Deep Bayes"** Discussed Bayesian techniques in deep learning methods.	**HSE - National Research University** (Moscow, Russia)
Jul 2017	**"Pre-doc summer school on learning systems"** Discussed the basics of learning theory.	**ETHZ** (Zürich, Switzerland)
Jul 2016	**"Mathematical methods for high-dimensional data analysis"** Learned topological data analysis, sketching and streaming.	**Technical University of Munich** (Munich, Germany)
Jul 2015	**Deephack** Our NN beat Google's Deep Mind in 'Karate' Atari game. Python, Lua, Torch.	**MIPT - National Research University** (Moscow, Russia)

Employment

| **Software Engineering Intern** | **ProtonMail** | **Jun 2017 — Aug 2017, Geneva, Switzerland** |

- Applied LSH for SPAM detection
- Developed the system for import/export of emails for the ProtonMail system

| **Research Intern** | **Y**andex | **Jun 2016 — Jun 2017, Moscow, Russia** |

Worked with **Prof. Andrey Ustyuzhanin** in close collaboration with CERN.
- Worked on muon tracks simulation with Generative Adversarial Networks
- Developed efficient architecture (50x to 30% FLOPS speedup, depending on the problem)

Teaching

Teaching assistant of **Prof. Stamatios Lefkimmiatis**.
- Signal and Image Processing, Feb — Apr 2017, Moscow, Russia

Teaching assistant of **Prof. Konrad Schindler**.
- Image Interpretation, Fall 2017, 2018, 2019, Zürich, Switzerland

Course instructor.
- Introduction to Deep Learning, May 2017, Yerevan, Armenia
- Introduction to Scientific Computing, Fall 2018, 2019, Zürich, Switzerland

| **Engineering Intern** | **Huawei** | **Jun 2015 — Jul 2015, Beijing & Shenzhen, China** |

- Learned GSM basic principles;
- Configured Huawei network equipment
- Configured IPTV and VoIP based on GPON

| **Research Intern** | **Innopolis University** | **May 2015 – Jul 2015, Kazan, Russia** |

Worked with **Prof. Evgeni Magid** at Intelligent Robotic Systems Lab.
- Applied preview-control algorithm for Stable Bipedal Locomotion problem

Computer Skills

Experienced:
- Programming Languages: Python • C/C++11 • Ruby • Go
- Libraries: pytorch • Tensorflow • OpenCV • Numpy/Scipy • Scikit-Learn • Pandas • Matplotlib • Theano • Lasagne • keras
- Development environment: Git • CMake • Vim • Jupyter
- Other: Linux Kernel • PostgreSQL • Sketchup SDK

Familiar:
- Languages: Matlab • Bash • R • JS • Wolfram • Assembly • PHP • LaTeX
- Libraries: Cuda • pybind11 • Open3D • Caffe • Sympy • NLTK • CVXPY • PCL •
- Development environment: Bazel • Visual Studio • Clion • SVN
- Other: Windows Kernel • QT • SWIG • SolidWorks

Languages

- Russian - Mother tongue
- English - Advanced
- German - Basic