Zürich Switzerland

Mikhail Usvyatsov

aelphy.github.io

Education

Oct 2017 — Present **ETHZ** **Zürich, Switzerland**

- **PhD** in tensor algebra 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

Selected Publications

- Huang S., **Usvyatsov M.**, Schindler K. Indoor Scene Recognition in 3D. IROS, 2020
- 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
- Borisyak M., **Usvyatsov M.**, Mulhearn M., Shimmin C., Ustuzhanin A. Muon trigger for mobile phones. Journal of Physics: Conference Series, 2017

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)

Employment

ML Intern — **Apple** — **Apr 2020 — Aug 2020, Zürich, Switzerland**

- Research Intern at Special Projects Group

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

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

Research Intern — **Yandex** — **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. Konrad Schindler**.

- Image Interpretation, Fall 2017, 2018, 2019, 2020, Zürich, Switzerland

Course instructor.

- Introduction to Deep Learning, May 2017, Yerevan, Armenia
- Introduction to Scientific Computing, Fall 2018, 2019, 2020, Zürich, Switzerland

Teaching assistant of **Prof. Stamatios Lefkimmiatis**.

- Signal and Image Processing, Feb — Apr 2017, Moscow, Russia

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 • pybind11 • Open3D • OpenCV • Numpy/Scipy • Scikit-Learn • Pandas • Matplotlib • Theano • Lasagne • Keras • Tensorflow
- Development environment: Git • CMake • Vim • Jupyter
- Other: Linux Kernel • PostgreSQL • Sketchup SDK

Familiar:

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

Languages

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