

# Alexander Shevchenko

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3400 Klosterneuburg, Austria

[Google Scholar](#)  
[LinkedIn](#)

## Education

### PhD Student in Mathematics & Computer Science

Institute of Science and Technology Austria  
Supervisors: [Marco Mondelli](#), [Dan Alistarh](#)

Sept. 2019 - Present  
Klosterneuburg, Austria

### Master Student in Statistical Learning Theory

Higher School of Economics / Skoltech  
Cumulative GPA: 9.25 (10.0 scale)

Sept. 2018 - Sept. 2019  
Moscow, Russia

### B.Sc. in Computer Science with Distinction

Higher School of Economics, Applied Mathematics and Informatics, ML specialization  
Cumulative GPA: 9.16 (10.0 scale); class rank: top 2%

Sept. 2014 - Aug. 2018  
Moscow, Russia

## Work Experience

### Research Assistant at Bayesian Methods Research Group

supervised by [Anton Osokin](#) and [Dmitry Vetrov](#)

Sept. 2017 - Sept. 2019  
Moscow, Russia

### Research Assistant at Samsung-HSE laboratory

Big Data and Information Retrieval School, Higher School of Economics

Nov. 2018 - Sept. 2019  
Moscow, Russia

### Research Assistant at Center of Deep Learning and Bayesian Methods

Big Data and Information Retrieval School, Higher School of Economics

Apr. 2018 - Nov. 2018  
Moscow, Russia

### Junior Analyst at IPONWEB

R&D Team; project: word2vec user embeddings for advertisement scoring system

July 2017 - Nov. 2017  
Moscow, Russia

## Publications and Preprints

### Fundamental Limits of Two-layer Autoencoders, and Achieving Them with Gradient Methods

Alexander Shevchenko\*, Kevin Kögler\*, Hamed Hassani, Marco Mondelli  
*Preprint, 2022*

[\[paper\]](#)

### Mean-field Analysis of Piecewise Linear Solutions for Wide ReLU Networks

Alexander Shevchenko, Vyacheslav Kungurtsev, Marco Mondelli  
*Journal of Machine Learning Research, 2022*

[\[paper\]](#)

### Landscape Connectivity and Dropout Stability of SGD Solutions for Over-parameterized NNs

Alexander Shevchenko, Marco Mondelli  
*International Conference on Machine Learning (ICML), 2020*

[\[paper\]](#)

## Research Projects

### Scaling Matters in Deep Structured Prediction Models

supervised by Anton Osokin

*Analyzed end-to-end training of deep structured models (combinations of DNNs and CRFs) and proposed an algorithm superior in terms of speed and stability to the conventional stage training approach.*

2018

[\[report\]](#)

### Calibration Theory for Structured Prediction Tasks

supervised by Anton Osokin

*Provided a tighter upper-bound on excess between surrogate risk (cross-entropy) and actual risk (Hamming distance) using Fenchel-Young losses framework.*

2019

## Teaching Experience

### Teaching Assistant for Information Theory

Institute of Science and Technology Austria

Oct. 2021 - Dec. 2021  
Klosterneuburg, Austria

### Teaching Assistant for Data Science Track Course

Institute of Science and Technology Austria

March 2021 - May 2021  
Klosterneuburg, Austria

**Teaching Assistant for Machine Learning**  
National Research University Higher School of Economics

Sept. 2017 - June 2018  
Moscow, Russia

**Teaching Assistant for Mathematical Analysis**  
National Research University Higher School of Economics

Feb. 2017 - June 2017  
Moscow, Russia

## **Technical Skills**

**Programming Languages:** Python, C++

**Technologies and Tools:** Pytorch, JAX (novice),  $\text{\LaTeX}$