Alexander Shevchenko

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Google Scholar
LinkedIn

Education

PhD Student in Mathematics & Computer Science — Sept. 2019 - Present
Institute of Science and Technology Austria — Klosterneuburg, Austria
Supervisors: Marco Mondelli, Dan Alistarh

Master Student in Statistical Learning Theory — Sept. 2018 - Sept. 2019
Higher School of Economics / Skoltech — Moscow, Russia
Cumulative GPA: 9.25 (10.0 scale)

B.Sc. in Computer Science with Distinction — Sept. 2014 - Aug. 2018
Higher School of Economics, Applied Mathematics and Informatics, ML specialization — Moscow, Russia
Cumulative GPA: 9.16 (10.0 scale); class rank: top 2%

Work Experience

Research Assistant at Bayesian Methods Research Group — Sept. 2017 - Sept. 2019
supervised by Anton Osokin and Dmitry Vetrov — Moscow, Russia

Research Assistant at Samsung-HSE laboratory — Nov. 2018 - Sept. 2019
Big Data and Information Retrieval School, Higher School of Economics — Moscow, Russia

Research Assistant at Center of Deep Learning and Bayesian Methods — Apr. 2018 - Nov. 2018
Big Data and Information Retrieval School, Higher School of Economics — Moscow, Russia

Junior Analyst at IPONWEB — July 2017 - Nov. 2017
R&D Team; project: word2vec user embeddings for advertisement scoring system — Moscow, Russia

Publications and Preprints

Fundamental Limits of Two-layer Autoencoders, and Achieving Them with Gradient Methods [paper]
Alexander Shevchenko*, Kevin Kögler*, Hamed Hassani, Marco Mondelli
Preprint, 2022

Mean-field Analysis of Piecewise Linear Solutions for Wide ReLU Networks [paper]
Alexander Shevchenko, Vyacheslav Kungurtsev, Marco Mondelli
Journal of Machine Learning Research, 2022

Landscape Connectivity and Dropout Stability of SGD Solutions for Over-parameterized NNs [paper]
Alexander Shevchenko, Marco Mondelli
International Conference on Machine Learning (ICML), 2020

Research Projects

Scaling Matters in Deep Structured Prediction Models — 2018
supervised by Anton Osokin — [report]
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.

Calibration Theory for Structured Prediction Tasks — 2019
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.

Teaching Experience

Teaching Assistant for Information Theory — Oct. 2021 - Dec. 2021
Institute of Science and Technology Austria — Klosterneuburg, Austria

Teaching Assistant for Data Science Track Course — March 2021 - May 2021
Institute of Science and Technology Austria — Klosterneuburg, Austria

Teaching Assistant for Machine Learning Sept. 2017 - June 2018
National Research University Higher School of Economics Moscow, Russia

Teaching Assistant for Mathematical Analysis Feb. 2017 - June 2017
National Research University Higher School of Economics Moscow, Russia

Technical Skills

Programming Languages: Python, C++
Technologies and Tools: Pytorch, JAX (novice), LaTeX