

Alexander Zimin | Résumé

Berlin – Germany

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Research interests

Time-series, anomaly detection, root cause detection, learning from dependent data, online learning, reinforcement learning

Education

Institute of Science and Technology Austria (IST Austria)

Doctor of Philosophy (PhD)

Christoph Lampert group

Vienna

2013–2018

Central European University

Master of Science in Applied Mathematics, With Distinction

Department of Mathematics and Its Applications

Budapest

2011–2013

P.G. Demidov Yaroslavl State University

Bachelor's Degree in Applied Mathematics and Computer Science, With Honors

The Faculty of Information and Computer Science

Yaroslavl

2007–2011

PhD thesis

Title: *Learning from dependent data*

Supervisor: Prof. Christoph H. Lampert

Abstract: this thesis contributes to the area of statistical learning theory by studying two types of problems with dependencies in the data. In the first problem the dependence appears on the level of samples in a single learning task. The second explores the multi-task setting when the tasks are dependent on each other even though the data for them can be independent. In both cases we model the data (samples or tasks) as stochastic processes and introduce new algorithms for both settings that take into account and exploit the resulting dependencies. We prove the theoretical guarantees on the performance of the introduced algorithms under different evaluation criteria and, in addition, we complement the theoretical study by the empirical one, where we evaluate some of the algorithms on two real world datasets to highlight their practical applicability.

Master thesis

Title: *Online Learning in Markovian Decision Processes*

Supervisor: Dr. László Györfi

Abstract: thesis studies the theoretical properties of Online Relative Entropy Search algorithm as an instance of the Proximal Point Algorithm and applies it to online stochastic shortest path problems and online learning in unichain MDPs.

Experience

Vocational.....

Amazon **Berlin**
Applied Scientist *2018-present*

A member of Machine Learning team in Intelligent Cloud Control. Developing large scale solutions for anomaly detection and root cause analysis.

Google **London**
Software Engineer Intern *2017*

Developing a data-driven personalization service for Google Developer Console (java/python/tensorflow)

Amazon **Berlin**
Applied Scientist Intern *2017*

Developing a tool for offline evaluation of algorithms for the multi-armed bandit (MAB) problem (java/python)

Fogsoft **Yaroslavl**
Software developer *2010-2011*

C# development, ultimate customer support

Easyalgo **Yaroslavl**
Freelance software developer *2008-2011*

Java Applet development, documentation writing

Miscellaneous.....

Reviewing

Conference reviewer

NeurIPS 2018, NeurIPS 2019, ICLR 2019, ICML 2019, ECCV 2020 (emergency reviews), ICLR 2020, ICLR 2021, ICLR 2022

Teaching **Vienna**
Teaching assistant *2013-2017*

Conducting practice sessions and grading homeworks

Teaching **Yaroslavl**
Volunteer teacher and project supervisor *2007-2011*

Supervising pupils in preparation for the "Discovery" conference

Languages

Russian: native

English: excellent

German: basic (B1 certificate)

Awards

- *Outstanding Academic Achievement Award* 2012/2013
Central European University, Budapest
- *Academic Pro-Rector's Excellence Award* 2011/2012
Central European University, Budapest

Publications and preprints

Alexander Zimin, Igor Mishchenko, and Rebecca Steinert. Event stream classification with limited labeled data for e-commerce monitoring. In *The 21st IEEE International Conference on Software*

Quality, Reliability and Security (QRS), 2021.

Alexander Zimin and Christoph H. Lampert. Towards practical conditional risk minimization. *arXiv preprint arXiv:1801.00507*, 2018.

Alexander Zimin and Christoph H. Lampert. Learning theory for conditional risk minimization. In *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2017.

Christoph H. Lampert, Liva Ralaivola, and Alexander Zimin. Dependency-dependent bounds for sums of dependent random variables. *preprint*, 2017.

Alexander Zimin and Christoph H. Lampert. Conditional risk minimization for stochastic processes. *arXiv preprint arXiv:1510.02706*, 2015.

Alexander Zimin and Gergely Neu. Online learning in markov decision processes by relative entropy policy search. In *Advances in Neural Information Processing Systems 26 (NIPS)*, 2013.

Alexander Zimin. Interpolation of objects in linear space. *"Notes about Computer Science and Mathematics" part 2, set of scientific articles; main editor A. Morozov; P.G. Demidov Yaroslavl State University*, 2009.