

ARTEM MOSKALEV

✉ a.moskalev@uva.nl | 🌐 amoskalev.github.io | 📞 +31 6 2711 7492

EDUCATION

University of Amsterdam, Delta Lab

Amsterdam

PhD in Machine Learning

August 2019 - August 2023

Advisor: prof. Arnold Smeulders

Research agenda: geometric deep learning, self-supervised learning, modeling inductive biases in neural networks

Skolkovo Institute of Science and Technology

Moscow

MSc in Applied Mathematics

September 2017 - June 2019

Advisor: prof. Anh-Huy Phan

Research agenda: inverse problems, signal processing, computational imaging

Thesis: Trainable regularization for Wiener filter deconvolution (top 3%)

SELECTED PUBLICATIONS

- [1] Artem Moskalev et al. “On genuine invariance learning without weight-tying”. In: *ICML workshop on Topology, Algebra, and Geometry in Machine Learning (ICML TAG-ML)*. 2023.
- [2] Artem Moskalev et al. “Contrasting quadratic assignments for set-based representation learning”. In: *European Conference on Computer Vision (ECCV)*. 2022.
- [3] Artem Moskalev et al. “LieGG: Studying Learned Lie Group Generators”. In: *Advances in Neural Information Processing Systems (NeurIPS)*. 2022.
- [4] Artem Moskalev, Ivan Sosnovik, and Arnold W.M. Smeulders. “Relational Prior for Multi-Object Tracking (**Oral**)”. In: *2nd Visual Inductive Priors for Data-Efficient Deep Learning Workshop*. 2021. URL: <https://openreview.net/forum?id=1MZnMuu8mg4>.
- [5] Ivan Sosnovik, Artem Moskalev, and Arnold Smeulders. “DISCO: accurate Discrete Scale Convolutions (**Best Paper Award**)”. In: *British Machine Vision Conference (BMVC)*. 2021.
- [6] Ivan Sosnovik, Artem Moskalev, and Arnold W.M. Smeulders. “How to Transform Kernels for Scale-Convolutions”. In: *2nd Visual Inductive Priors for Data-Efficient Deep Learning Workshop*. 2021. URL: https://openreview.net/forum?id=rTpTF_-f0wm.
- [7] Ivan Sosnovik*, Artem Moskalev*, and Arnold W.M. Smeulders. “Scale Equivariance Improves Siamese Tracking”. In: *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*. 2021.

TEACHING EXPERIENCE

Statistics, Simulation and Optimization

University of Amsterdam

Teaching Assistant, 6EC

2019 - 2022

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Introduction to Image Processing

Lecturer

Skolkovo Institute of Science and Technology

February 2019 - March 2019

A mini-course for graduate students to introduce the basics of digital image processing.

STUDENT SUPERVISION

Evgenia Iliia: Efficient self-supervised learning for real-world tabular data

Harm Manders: Dense contrastive learning for microscopy cell segmentation

Lotte Bottema: Deep sequence modeling for trajectory forecasting

Nadia Isiboukaren: Space-Time-Slot correspondence for video object segmentation

Jorrit Ypenga: Domain-regularization for siamese object tracking

WORK EXPERIENCE

Samsung RnD Institute

Machine Learning Intern

AI Algorithms Lab, Moscow

June 2018 - August 2018

The main direction of my work in Samsung included computer vision and image processing. In particular, we worked on the problem of image enhancement with generative models.

Otkritie FC

Data Science Intern

Department of Statistical Analysis, Moscow

May - September 2017

My work included statistical analysis and anomaly detection. I was responsible for the adaptation and deployment of the machine learning algorithms and statistical models.

Moscow State University of Medicine

External Research Assistant

Moscow

February 2016 - March 2017

My work as a research assistant involved mathematical modeling and embedded software engineering. We used mathematical models to describe the behavior of the neurons under the mechanical influence.

RELEVANT SKILLS

Programming and Computing

- Languages:
 - Python, R, SQL, Bash, C++ (basic)
- Frameworks:
 - Pytorch, JAX, Sklearn, Cvxpy, Amplide
- Systems:
 - Comfortable in GNU/Linux and Microsoft Windows environments
- GitHub profile: github.com/amoskalev

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- Google Scholar: scholar.google.com/citations?user=mh1CSCEAAAAJ&hl

Languages

- Fluent in English and Russian

ADDITIONAL ACHIEVEMENTS

- Best paper award BMVC 2021 (one best paper for the whole conference)
- Reviewer at NeurIPS, CVPR, ECCV/ICCV, Computer Vision and Image Understanding Journal
- Skoltech graduate merit scholarship

REFERENCES

Available upon request.