

Ivan Sosnovik

PhD student,
University of Amsterdam

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Research Interests

Computer Vision, Machine Learning, Invariance and Equivariance in Neural Networks, Representation Learning, Structured Neural Networks

Education

- 2017 – Present **PhD, Computer Vision**,
University of Amsterdam, Amsterdam, The Netherlands
“Leaning Symmetries in Computer Vision”
- 2015 – 2017 **MSc with Honors, Applied Mathematics and Physics**,
Moscow Institute of Physics and Technology, Moscow, Russia
Skolkovo Institute of Science and Technology, Moscow, Russia
“Neural Networks for Topology Optimization”
- 2011 – 2015 **BSc with Honors, Applied Mathematics and Physics**,
Moscow Institute of Physics and Technology, Moscow, Russia
“Two-dimensional system for the prior positioning of the STM”

Highlights

- Scholarships *“Foundation for the Development of Innovation Education”* (2012 – 2014)
- Awards Kaggle *“Leaf Classification”* competition [interview]
National Physics Olympiad for Students 2013
Moscow Physics Olympiad 2011
Phystech Mathematical Olympiad 2011
Phystech Physics Olympiad 2011
Moscow Mathematical Olympiad 2010
Moscow Physics Olympiad 2010

Academic Experience

- Teaching MSc course **Applied Machine Learning**,
University of Amsterdam, 2017 – 2020
- MSc, PhD course **iOS Game Development**,
Skolkovo Institute of Science and Technology, 2016
- Reviewing ICLR 2021, WACV 2021, CVPR 2018, Engineering Optimization, Computer
Methods in Applied Mechanics and Engineering
- Supervision Jan Jetze Beitler, Michał Szmaja, Gongze Cao, Daan Ferdinandusse, Jonne
Goedhart

Work Experience

- 08.2016 – 09.2016 **Intern, SAP Labs**
Developed prototypes for a smart fleet management system. Used SAP HCP for the data aggregation and analysis. Designed software and hardware solutions for tracking the engine's and the vehicle's parameters.
- 02.2016 – 08.2016 **iOS Developer, Teachbase**
Developed the client-server iOS application for watching educational courses. Developed the platform for testing. [\[link\]](#)
- 09.2014 – 06.2015 **Laboratory Assistant, P.L. Kapitza Institute for Physical Problems**
Studied nano-structured materials. Designed a system for the prior positioning of the needle of the scanning tunneling microscope. Developed software for data analysis and control.

Skills

- Coding Python, Objective-C, Swift, C
- Technical Cryogenics, Vacuum Equipment, Scanning Tunneling Microscopy

Publications

- 2020 I. Sosnovik*, A. Moskalev*, A. Smeulders, “*Scale Equivariance Improves Siamese Tracking*”, WACV, 2021, [\[pdf\]](#)
- 2019 I. Sosnovik, M. Szmaja, A. Smeulders, “*Scale-Equivariant Steerable Networks*”, ICLR, 2020, [\[pdf\]](#)[\[code\]](#)
- A. Atanov, A. Volokhova, A. Ashukha, I. Sosnovik, D. Vetrov, “*Semi-Conditional Normalizing Flows for Semi-Supervised Learning*”, ICML INNF, 2019, [\[pdf\]](#)[\[code\]](#)
- I. Sosnovik, I. Oseledets, “*Neural Networks for Topology Optimization*”, Russian Journal of Numerical Analysis and Mathematical Modelling, 34(4) [\[pdf\]](#)[\[code\]](#)
- 2018 J.J. Beitler, I. Sosnovik, A. Smeulders, “*PIE: Pseudo-Invertible Encoder*”, [\[pdf\]](#)