Ivan Skorokhodov

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universome

Work experience

Jun 2023–now **Research Scientist**, *Snap Research*, Dubai, UAE.
- Working on image/video/3D generative models.

Mar 2020–Mar 2023 **CS PhD student**, *King Abdullah University of Science and Technology*, Thuwal, Saudi Arabia.
- Built several GAN-based models for image/video/3D generation.
- Took courses on computer graphics, GPU programming, and machine learning.
- Served as a teaching assistant on 3 deep learning courses.
- Supervised by prof. Peter Wonka and prof. Mohamed Elhoseiny.

Jun 2022–Oct 2022 **Research Intern**, *Snap Inc.*, Los Angeles, United States.
- Built a 3D-aware image generator for in-the-wild data.
- Supervised by Sergey Tulyakov and Aliaksandr Siarohin.

Feb 2018–Mar 2020 **Deep Learning Researcher**, *Moscow Institute of Physics and Technology*, Moscow, Russia.
- Developed multi-point optimization strategy to explore loss surfaces of neural networks. It resulted in a NeurIPS 2019 optimization workshop paper.
- Built a text style transfer model by combining CycleGAN with Transformers. It was presented at art exhibitions in Moscow and Rio de Janeiro.
- Served as a teaching assistant (+ gave 2 lectures) on the "Theoretical Deep Learning" course.

Sep 2019–Dec 2019 **Visiting Student**, *King Abdullah University of Science and Technology*, Thuwal, Saudi Arabia.
- Explored initialization/normalization techniques in the context of zero-shot learning and continual learning (supervised by prof. Mohamed Elhoseiny). It resulted into an ICLR 2021 paper.

Mar 2015–Oct 2016 **Software Engineer**, *Yandex*, Moscow, Russia.
- Developed the client side of the offer card for https://market.yandex.ru, which had >1M daily users.
- Performed different infrastructure/devops tasks (deployment, unit/integration/stress tests, etc).
- Implemented many product/infrastructure features for https://market.yandex.ru in js/node.js/css/xslt.

Sep 2014–Mar 2015 **Senior Software Engineer**, *Federal State Statistics Service*, Moscow, Russia.
- Built a web crawler for automatic dictionary generation: it parsed web pages on a specified topic, detected terms and definitions, categorized them, processed, and saved into the database.

Jan 2014–Sep 2014 **Full-Stack Software Engineer**, *Brainarium*, Moscow, Russia.
- Built a kaggle-like platform with node.js + marionette.js stack and all the required infrastructure.

Education

Mar 2020–Mar 2023 **King Abdullah University of Science and Technology**, *Thuwal, Saudi Arabia.*
Visual Computing Center, Ph.D. student, Computer Science. GPA: 3.92/4.
Supervisors: prof. Peter Wonka and prof. Mohamed Elhoseiny.

Sep 2018–Jun 2021 **Yandex School of Data Analysis**, *Moscow, Russia.*
M.S. equivalent, Data Analysis in Applied Sciences. GPA: 4.77/5.
Thesis: Normalization Matters in Zero-Shot Learning.
Supervisor: prof. Ilya Muchnik

Sep 2014–Jul 2016 **Moscow Engineering Physics Institute (MEPhI)**, *Moscow, Russia.*
M.S., Applied Informatics. GPA: 4.78/5.
Thesis: Product Search Ranking with Neural Networks.
Supervisor: prof. Anna Tikhomirova.

Sep 2010–Jul 2014 **Moscow Engineering Physics Institute (MEPhI)**, *Moscow, Russia.*
B.S. (with honors), Innovative Management. GPA: 4.88/5
Thesis: Software Development Management Systems.
Supervisor: prof. Igor Prokhorov

Selected publications

Apr 2023 **3D generation on ImageNet**, *ICLR 2023 (Oral)*.
Ivan Skorokhodov, Aliaksandr Siarohin, Yinghao Xu, Jian Ren, Hsin-Ying Lee, Peter Wonka, Sergey Tulyakov
[paper] [website] [code]

Jun 2022 **EpiGRAF: Rethinking training of 3D GANs**, *NeurIPS 2022*.
Ivan Skorokhodov, Sergey Tulyakov, Yiqun Wang, Peter Wonka
[paper] [website] [code]

Nov 2021 **StyleGAN-V: A Continuous Video Generator with the Price, Image Quality and Perks of StyleGAN2**, *CVPR 2022*.
Ivan Skorokhodov, Sergey Tulyakov, Mohamed Elhoseiny
[paper] [website] [code]

Jun 2021 **Adversarial Generation of Continuous Images**, *CVPR 2021*.
Ivan Skorokhodov, Savva Ignatyev, Mohamed Elhoseiny
[paper] [website] [code]

Dec 2019 **Loss Surface Sightseeing by Multi-Point Optimization**, *"Beyond First Order Methods in ML" workshop, NeurIPS 2019*.
Ivan Skorokhodov, Mikhail Burtsev
[paper] [website] [code]

Awards

June 2022 **Dean's List Award**, *KAUST CEMSE department*, Thuwal, Saudi Arabia.
A $2,500 award given to top students by CEMSE division for their academic achievements.

Talks

May 2023 **3D generation on ImageNet, Kigali, Rwanda**.
"Generative Models" session, ICLR 2023

April 2023 **Generative Models for Neural Fields, online (recording)**.
Toronto AI in Robotics Seminar, University of Toronto

June 2022 **Deep Generative Models over Continuous Data, online**.
Vision and AI seminar, Weizmann Institute of Science

Teaching experience

Fall 2021 **Teaching assistant**, *King Abdullah University of Science and Technology*, Thuwal, Saudi Arabia.
"Data-Efficient Deep Learning" course, taught by prof. Mohamed Elhoseiny.

Spring 2021 **Teaching assistant**, *King Abdullah University of Science and Technology*, Thuwal, Saudi Arabia.
"Deep Generative Models" course, taught by prof. Mohamed Elhoseiny.

Fall 2020 **Teaching assistant**, *King Abdullah University of Science and Technology*, Thuwal, Saudi Arabia.
"Data-Efficient Deep Learning" course, taught by prof. Mohamed Elhoseiny.

Fall 2019 **Teaching assistant**, *Moscow Institute of Physics and Technology*, Moscow, Russia.
"Theoretical Deep Learning" course (part II), taught by Evgeniy Golikov.

Spring 2019 **Lecturer/Teaching assistant**, *Moscow Institute of Physics and Technology*, Moscow, Russia.
"Theoretical Deep Learning" course (part I), taught by Evgeniy Golikov.
My lecture notes on Information Bottleneck can be viewed [here].

Reviewing

Conferences CVPR 2022, ECCV 2022, SIGGRAPH Asia 2022, ICLR 2023, CVPR 2023 (outstanding reviewer), ICCV 2023, NeurIPS 2023

Journals IJCV

Selected side projects

Sep 2020–Dec 2020 **RtRs** [github].
Simple ray tracing and rasterization engine written in rust. There are various features implemented: quadrics/mesh rendering, distributed ray tracing, camera movement, arcball controls, etc.

Dec 2020 **Gaussian Non-Uniform Interpolation** [github] [paper].
A CUDA kernel that is able to interpolate points on a non-uniform grid. This is done by representing each point as a 2D gaussian distribution.

Nov 2018–Aug 2020 **Firelab** [github].
Python framework for running pytorch experiments. Supports multi-gpu hyperparameters optimization, training class boilerplate, tensorboard logging, etc.

Oct 2016–Mar 2017 **Aladdin** [github].
A betting arbitrage bot written in rust.

May 2016 - Aug 2016 **Omniplan Web** [github].
A web interface for omniplan platform written with react.js.

Skills

Coding	python, rust, CUDA, C++, javascript
ML/DL libs	torch, torchvision, tensorflow, sklearn, pandas, numpy
Miscellaneous	docker, git, bash, LaTeX

Hackathon awards

Nov 2018 **Junction**, *SAP incentive award*, Junction Team, Espoo, Finland.

Jun 2018 **BlockchainHack**, *1st place*, Blockchain Institute, Moscow, Russia.

Feb 2018 **Unsupervised Machine Translation**, *2nd place*, MIPT, Dolgoprudny, Russia.

Aug 2017 **FunHack**, *some minor prize*, Science Guide, Moscow, Russia.

Nov 2016 **VK hackathon**, *1st place + people's choice award*, VK, Saint-Petersburg, Russia.

Nov 2016 **BEM hackathon**, *1st place*, Yandex, Moscow, Russia.