

TARAS KHAKHULIN

Research Interests: Neural Rendering, Image and Video Synthesis, 3D Representations, Digital Humans

EDUCATION

Ph.D. student in Computer Science, Skolkovo Institute of Science and Technology Nov 2020 - present
Advisor: Victor Lempitsky
Representations for view synthesis
Moscow, Russia

Master of Computer Science, Skolkovo Institute of Science and Technology Sep 2018 - Jun 2020
Advisor: Ivan Oseledets
GPA 5.0 out of 5.0, diploma with honours
Moscow, Russia

Bachelor in Applied Math and Physics, Moscow Institute of Physics and Technology Sep 2014 - Jun 2018
GPA 4.74 out of 5.0
Moscow, Russia

EXPERIENCE

Samsung AI Center – Moscow Apr 2019 - present
Research Engineer
Moscow, Russia

Working on Image Synthesis and Neural Rendering:

- Proposed one-shot 3D reconstruction for head-avatars with neural rendering. Work is *under review*.
- Improved real-time novel views synthesis with scene as a set of semi-transparent meshes — CVPR’22 [3].
- Developed generative models without spatial convolutions with the same quality — CVPR’21 *Oral Talk* [4].
- Improved style transfer for the high-resolution photo-realistic landscapes — CVPR’20 *Oral Talk* [5].

Laboratory of Neural Systems and Deep Learning, MIPT, Feb 2018 – Sep 2018
Research Intern
Moscow, Russia

Worked on DeepPavlov an open source conversational framework.

- Alleviated the issue of typos with contextualized approach for DeepPavlov library — W-NUT EMNLP’18 [9].

Deep Learning School, MIPT Sep 2018 – May 2020
Instructor
Moscow, Russia

Co-found practical courses for students. Teaching assistant for 500+ active users dlschool.org.

NetCracker Technology Mar 2017 – Sep 2017
Junior Software Engineer
Moscow, Russia

Built a client-server communication component with JavaEE. Accelerate SQL queries more than 2 times.

PUBLICATIONS

- [1] T. Khakhulin, V. Skliarova, V. Lempitsky, and E. Zakharov, “Realistic one-shot mesh-based head avatars.”
- [2] P. Solovev, T. Khakhulin, and D. Korzhenkov, “Self-improving multiplane-to-layer images for novel view synthesis.”
- [3] T. Khakhulin, D. Korzhenkov, P. Solovev, G. Sterkin, T. Ardelean, and V. Lempitsky, “Stereo magnification with multi-layer images,” in *CVPR*, 2022.
- [4] I. Anokhin, K. Demochkin, T. Khakhulin, G. Sterkin, V. Lempitsky, and D. Korzhenkov, “Image generators with conditionally-independent pixel synthesis,” in *CVPR*, 2021.
- [5] I. Anokhin, P. Solovev, D. Korzhenkov, A. Kharlamov, T. Khakhulin, A. Silvestrov, S. Nikolenko, V. Lempitsky, and G. Sterkin, “High-resolution daytime translation without domain labels,” in *CVPR*, 2020.
- [6] T. Khakhulin, R. Schutski, and I. Oseledets, “Learning elimination ordering for tree decomposition problem,” at *LMCA workshop of NeurIPS*, 2020.
- [7] R. Schutski, D. Kolmakov, T. Khakhulin, and I. Oseledets, “Simple heuristics for efficient parallel tensor contraction and quantum circuit simulation,” *Physical Review A*, 2020.
- [8] M. Burtsev, A. Seliverstov, R. Airapetyan, M. Arkhipov, D. Baymurzina, N. Bushkov, O. Gureenkova, T. Khakhulin, and et. al., “Deeppavlov: Open-source library for dialogue systems,” in *ACL*, 2018.
- [9] V. Malykh, V. Logacheva, and T. Khakhulin, “Robust word vectors: Context-informed embeddings for noisy texts,” in *W-NUT@EMNLP*, 2018.