Vanessa Sclearova

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Computer Vision & AI researcher with 6+ years of experience working on diverse research & engineering projects. At the moment, a Ph.D. student at ETH Zurich, (CVG group) and Max Planck Institute for Intelligent Systems (Perceiving Systems) with a focus on digital humans.

Professional Experience

ETH Zurich, (CVG group)
Research Scientist, Ph.D. student — 07/2025 - Present

- Research on dynamic head avatars from multi-view images.

Max Planck Institute for Intelligent Systems, (Perceiving Systems)
Research Scientist, Ph.D. student — 06/2023 - Present

- 3D reconstruction, rendering, and simulation of head avatars with strand-based hair.
- Developed a text-guided generative model and single-view strand reconstruction method.
- Research on hair rendering with Gaussian Splatting.
- Published 3 first-author papers (CVPR 2024, ICCV 2025, 3DV 2026) + 3 collaborative works.
- Supervised 3 master's students and 2 group projects on computer vision and virtual reality.

Samsung AI Center
Research Engineer — 08/2021 - 06/2023

- Worked on mesh reconstruction methods for learning human hair geometry;
- Co-authored a paper accepted to ECCV 2022 on one-shot mesh reconstruction of human avatars;
- Co-authored a patent on reconstruction and rendering of human head avatars (#12169900);
- Worked on multi-view hair reconstruction methods with strand-based representations;
- Co-authored a paper accepted to ICCV 2023 on strand-based hair reconstruction for human avatars.

Samsung AI Center
Assistant Engineer — 06/2021 - 08/2021

- Developed a Reptile-based meta-learning framework for NeRF models;
- Integrated the meta-learning pipeline into the top-performing model in distributed mode.

Huawei
Assistant Engineer — 06/2020 - 10/2020

- Tested state-of-the-art low-bit quantization methods on Transformer and CNN/MLP models;
- Conducted experiments on automatic quantization using reinforcement learning.

Gazprom Neft
Assistant Engineer — 02/2019 - 01/2020

- Developed reinforcement learning agents (DQN and DQfD) for solving dynamic pricing problems;
- Implemented multi-armed contextual bandit algorithms;
- Achieved over 90% of the total possible rewards with developed agents;
- Co-authored a patent on dynamic pricing (#2022619566);

Education

ETH Zurich — Zurich, Switzerland
Ph.D. in Computer Science — 09/2023 - Present

Topic: *Digital human avatars*, prof. Marc Pollefeys, prof. Michael Black, prof. Justus Thies

Skolkovo Institute of Science and Technology, Skoltech — Moscow, Russia
M.Sc. in Computer Science

Topic: *Reinforcement learning for Deep brain simulation* (thesis), prof. Dmitry Dylov, GPA 4.84 / 5.00

Moscow Institute of Physics and Technology, MIPT Moscow, Russia
M.Sc. in Computer Science
GPA 4.95 / 5.00

Moscow Institute of Physics and Technology, MIPT Moscow, Russia
B.Sc. in Applied Mathematics and Physics
Topic: *Mathematical model of HIV infection*, Institute of Numerical Mathematics, prof. Gennady Bocharov, GPA 4.4 / 5.00

Relevant Publications & Preprints

NeuralFur: Animal Fur Reconstruction from Multi-view Images 2026
V. Sklyarova*, B. Kabadayi*, A. Yiannakidis, G. Becherini, M. Black, J. Thies *3DV*
(Oral presentation, top 12.4% of the submissions)

GeomHair: Reconstruction of Hair Strands from Colorless 3D Scans (page) 2025
R. Lazuardi, A. Sevastopolsky, E. Zakharov, M. Nießner, V. Sklyarova *In submission*

Im2Haircut: Single-view Strand-based Hair Reconstruction for Human Avatars (page) 2025
V. Sklyarova, E. Zakharov, M. Prinzler, G. Becherini, M. Black, J. Thies ICCV

Joker: Conditional 3D Head Synthesis with Extreme Facial Expressions (page) 2025
M. Prinzler, E. Zakharov, V. Sklyarova, B. Kabadayi, J. Thies 3DV

Gaussian Haircut: Human Hair Reconstruction with Strand-Aligned 3D Gaussians (page) 2024
E. Zakharov, V. Sklyarova, M. Black, G. Nam, J.Thies, O. Hilliges ECCV

HAAR: Text-Conditioned Generative Model of 3D Strand-based Human Hairstyles (page) 2024
V. Sklyarova, E. Zakharov, O. Hilliges, M. Black, J.Thies CVPR

Neural Haircut: Prior-Guided Strand-Based Hair Reconstruction (page) 2023
V. Sklyarova, J. Chelishev, A. Dogaru, I. Medvedev, V. Lempitsky, E. Zakharov ICCV
(Oral presentation, top 1.8% of the submissions)

Realistic one-shot mesh-based head avatars (page) 2022
T. Khakhulin, V. Sklyarova, V. Lempitsky, E. Zakharov ECCV

* denotes equal contribution.

Awards

Team hackathon prizer Erlangen, Germany
Present a solution for automatic paper reproduction using the ChatGPT system. Dec 2023

Entrepreneurial Spirit certificate (link) Russia, Moscow
Skoltech Entrepreneurship Award; June 2022

Finalist of accelerator competition Russia, Moscow
Our startup idea came to the final in the accelerator competition. Feb 2022

Team hackathon prizer (3^{rd} place) (link) Russia, Moscow
The task from Sbermarket: recommend top 50 future products for each user. Sep 2020

Team hackathon winner (1^{st} place) (link) Russia, Moscow
The task from Tinkoff: develop a game with finance context using Oleg (voice chatbot). Sep 2020

Team case winner (1^{st} place) Russia, Moscow
"StudStock", The task from Vkusvill: build a recommendation system. Apr 2019

Team hackathon prizer (2^{nd} place) Russia, Dolgoprydny
The task from Gazpromneft: maximize profit on gas stations, using reinforcement learning. Oct 2018

Skills / Areas

Digital Humans · 3D Modeling and Reconstruction · 3D Scanning · 2D & 3D Computer Vision · 3DMMs · NeRFs · Gaussian Splatting · Neural Rendering · Nerf · Diffusion Models · Hair and fur reconstruction · Physics-based simulations · Computer Graphics for Vision · Reinforcement Learning · Python · C/C++ · PyTorch · Blender

Languages

English (full professional), German (basic), Russian (native)