

Work Experience

Postdoc Researcher	École Polytechnique, LIX, GeomeriX	Feb 2022 - Oct 2024
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- Supervised by [Maks Ovsjanikov](#), participation in research projects combining geometry processing and deep learning, assistance in managing PhD students.
- Ongoing project about a novel Neural Radiance Field (NeRF) representation for 3D shape reconstruction and NeRF editing.
- Ongoing project about end-to-end lightweight probabilistic hierarchical point cloud diffusion model.
- VoroMesh**: developed a deep learning model for a novel 3D shape representation, capable of producing watertight meshes from input SDF grids. Managed a PhD student over the course of the project.
- Self-supervised Dual Contouring**: worked in a team with a PhD student on a project about a novel differentiable mesh reconstruction model based on Deep Learning and Dual Contouring. Explored probabilistic modifications of the proposed model.

PhD Student	Inria, THOTH/MORPHEO Labs	Sep 2017 - Dec 2021
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- Supervised by [Jakob Verbeek](#) and [Edmond Boyer](#), development of Deep Learning models for 3D shape modeling.
- Discrete Point Flow Networks**: developed a probabilistic generative model for point clouds based on invertible normalizing flows. Achieved comparable to state-of-the-art performance while reducing the computational load by magnitudes.
- Probabilistic Reconstruction Networks**: developed a probabilistic framework for inference-based 3D shape reconstruction models from image inputs. Best science paper honorable mention at British Machine Vision Conference 2019.

Research Intern	Skoltech, Computer Vision Lab	Sep 2016 – Jul 2017
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- Supervised by [Victor Lempitsky](#), research projects on CNN compression and 3D point cloud recognition.
- Escape From Cells: Kd-Network for 3D Shape Recognition**: developed a novel feature extraction deep neural network model for classification, segmentation and retrieval tasks for point clouds based on construction of noisy kd-trees.

Research Intern	Joint Institute for Nuclear Research	Sep 2014 – Jul 2015
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- Supervised by [Oleg Samoylov](#), research in neutrino physics on NOvA experiment, [Fermilab](#).
- Data analysis of simulated and real neutrino experiments for classification of detected neutrino interaction events.

Education

Grenoble	Université Grenoble Alpes (UGA)	Sep 2017 – Dec 2021
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- PhD in Mathematics and Informatics. Thesis: Deep Learning for 3D Shape Modeling.

Moscow	Skolkovo Institute of Science and Technology (Skoltech)	Sep 2015 – Jul 2017
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- MSc in Data Science with Honors. Thesis: Recognition of 3D Point Clouds.

Moscow	Moscow Institute of Physics and Technology (MIPT)	Sep 2011 – Jul 2015
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- BSc in Applied Mathematics and Physics with Honors. Thesis: Selection of Quasi-Elastic Neutrino Scattering Events.

Additional Experience and Awards

- Regular reviewer for CVPR, NeurIPS, ICLR, ICCV, ECCV, ICML, TPAMI, *etc.*
- Organization of weekly laboratory seminars among the members my team in LIX, École Polytechnique.
- Best Science Paper Honorable Mention Award at British Machine Vision Conference, 2019.
- Participation in [Prairie AI Summer School](#), 2018.
- 2nd place in [ShapeNet Point Cloud Segmentation Challenge](#) held at the International Conference on Computer Vision 2017.
- Teaching work for a summer school on introductory machine learning for high school students.
- Organization of career fair days for university students in MIPT.

Skills, Activities and Interests

- Scientific**: Computer Vision, Deep Learning, Probabilistic Modeling, 3D Shape Recognition, 3D Shape Generation, Differentiable 3D Shape Representations, Differentiable Rendering.
- Recent technical experience**: Python, PyTorch, HDF5.
- Previous technical experience**: TensorFlow, MongoDB, C++.
- Languages**: English (fluent), French (intermediate), Russian (native).
- Hobbies**: Running, Weight Lifting, Skiing, World of Warcraft competitive group activities (reached top 0.1% of players).

Publications and Technical Reports

- **[Highlight]** R. Sundararaman and R. Klokoy and M. Ovsjanikov. [Self-Supervised Dual Contouring](#). In CVPR'24.
- N. Maruani, R. Klokoy, M. Ovsjanikov, P. Alliez, M. Desbrun. [Voromesh: Learning watertight surface meshes with voronoi diagrams](#). In ICCV'23.
- R. Klokoy, E. Boyer, J. Verbeek. [Discrete Point Flow Networks for Efficient Point Cloud Generation](#). In ECCV'20.
- **[Oral]** R. Klokoy, J. Verbeek, E. Boyer. [Probabilistic Reconstruction Networks for 3D Shape Inference from a Single Image](#). In BMVC'19.
- **[Oral]** L. Yi, et al. [Large-Scale 3D Shape Reconstruction and Segmentation from Shapenet Core55](#). In ICCVW'17.
- **[Spotlight]** R. Klokoy, V. Lempitsky. [Escape from Cells: Deep Kd-Networks for the Recognition of 3D Point Cloud Models](#). In ICCV'17.

Selected Invited Talks and Paper Presentations

- [ECCV'20 paper presentation video](#).
- [Fifth Christmas Colloquium on Computer Vision at Yandex](#),
- [BMVC'19 Oral Paper Presentation](#),
- [ICCV'17 ShapeNet Point Cloud Segmentation Challenge Workshop Presentation](#),
- [ICCV'17 Spotlight Paper Presentation](#).