Aleksei Zhuravlev

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EDUCATION

MSc in Computer Science — **University of Bonn, Germany**
Grade 1.3 / 1.0 — **Oct 2022 – Now**

BSc in Physics — **Moscow State University, Russia**
Sep 2018 – Aug 2022

RESEARCH EXPERIENCE

Master Thesis / CVPR 2025 — **University of Bonn**
Denoising Functional Maps: Diffusion Models for Shape Correspondence — **Apr 2024 – Now**
[1]

- Trained a Denoising Diffusion Model (DDPM) to find correspondence between 100 scans of humans from the FAUST dataset
- Improved the Mean Geodesic Error by 3.2% compared to the baseline mesh convolutional model

Internship — **ETH Zurich**
Neural Hand Reconstruction — **May 2023 – Dec 2023**
Project Page

- Developed a NeRF-based reconstruction of the human hand from 60 images, using the Interhand3.6m dataset
- Implemented a point-mesh distance finding algorithm using Octrees; reduced the calculation time from 5s to 0.3s compared to the baseline

Semester Project — **University of Bonn**
Human Pose Forecasting — **Apr 2023 – Sep 2023**
Project Page

- Developed a human pose prediction model based on spatial convolution, trained on the Human2.6m dataset
- Reduced the Mean Per Joint Position Error (MPJPE) by 2.9% over the baseline transformer model

Research Assistant — **Moscow State University**
Segmentation of satellite images — **Nov 2019 – Feb 2022**
[2], [3]

- Utilized the Very Deep Super-Resolution (VDSR) network to upscale the low-resolution satellite images of neutron stars
- Implemented a background subtraction model based on the R-CNN network; achieved a 3x speedup compared to the GrabCut algorithm

PUBLICATIONS

1. **Denoising Functional Maps: Diffusion Models for Shape Correspondence**
   A. Zhuravlev, Z. Lähner, V. Golyanik; *CVPR 2025*
   PDF, Project Page

2. **Toward Constraining Axions with Polarimetric Observations of the Isolated Neutron Star RX J1856.5–3754**
   A. Zhuravlev, R. Taverna, R. Turolla; *The Astrophysical Journal 2022*
   PDF

3. **Photon-Axion Mixing in Thermal Emission of Isolated Neutron Stars**
   A. Zhuravlev, S. Popov, M. Pshirkov; *Physics Letters B 2021*
   PDF

ADDITIONAL EXPERIENCE AND AWARDS

HackaTUM Hackathon, 1st place **Nov 2022**
Project Page

- Developed a ResNet-based model to recognize 3 types of recyclable waste from 3D scans with 73% accuracy

TUM ML4Earth Hackathon, 1st place **Oct 2022**
Project Page, Code

- Trained an MLP-based network to predict soybean yields in 190 US counties over 5 years

Scholarship for outstanding students, Moscow State University **Sep 2020 – Jan 2022**

- Awarded to top 5% of all students