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   **University of Bonn**
Denoising Diffusion for Mesh Correspondence   **Apr 2024 – Now**
Supervisors: Prof. Zorah Lähner, Prof. Vlad Golyanik

- 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**
Supervisor: Prof. Danda Pani Paudel
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 temporal 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**
[1], [2]

- 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. **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](#)

2. **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

Teaching assistant, Moscow State University   **Feb 2021 – Jan 2022**
- Instructed a group of 20 students in the course "Algorithms and Complexity"

Scholarship for outstanding students, Moscow State University   **Sep 2020 – May 2022**
- Awarded to top 5% of all students

Moscow Informatics Olympiad   **May 2020**
- 3rd place out of 70 teams