DENIS TARASOV

Saint Petersburg, Russia

tarasov.denis.al@gmail.com **+7 931-227-68-60** **linkedin.com/in/tarasovdeal/** **github.com/DT6A**

EDUCATION

Saint Petersburg Higher School of Economics
Bachelor in Applied Mathematics and Computer Science, GPA 8.74/10 **September 2019 – June 2023**

EXPERIENCE

Machine Learning Engineer intern at Meta **July 2022 – Present**
Working as a part of the AI Applied Research Relevance team. *Skills*: Python, PyTorch, Presto.

Laboratory Assistant at Tinkoff AI **October 2021 – July 2022**
Research on applying pre-trained Language Model for solving text-free Offline Reinforcement Learning problems. Published short paper at ICLR 2022 and ACL 2022 workshops. *Skills*: Python, PyTorch, NLP, Reinforcement Learning.

Machine Learning Engineer intern at Yandex **July 2021 – October 2021**
Researched neural networks distributed learning with slow network. Discovered weakness and purposed solution for existing implementations of 1-bit Adam and 1-bit LAMB to prevent divergence. Adapted 1-bit optimizers for production needs. *Skills*: Python, PyTorch.

Research intern at JetBrains Research **July 2020 – August 2020**
Research work on predicting of antibodies CDR-H3 loops 3D structures from amino acid sequences with end-to-end Deep Learning approach. Recollected and reprocessed data because original data was incorrect. Successfully modified baseline to make predicted structures physically valid. Applied transfer learning to protein folding network and beaten baseline by 20%. Afterwards results of the project were published at Machine Learning in Structural Biology Workshop, NeurIPS 2021 https://arxiv.org/abs/2111.10656 (my data collection with preprocessing, visualization and model modification present in the paper repository). *Skills*: Python, PyTorch, TensorFlow 1.

PUBLICATIONS AND PREPRINTS

Prompts and Pre-Trained Language Models for Offline Reinforcement Learning. **ICLR 2022 Workshop GPL**
Using pre-trained Language Models for boosting performance of Offline RL algorithms where environments does not contain text.

Fixing 1-bit Adam and 1-bit LAMB algorithms.. **SEIM 2022**
Paper about fixing 1-bit optimizers and proposing new aspects that should be considered when new SGD algorithms are developed.

Predicting ethnicity with data on personal names in Russia. **Preprint 2021**
Preprint about ethnic names classification. My part is described in sections 3, 4 and 5.

PROJECTS

Multi-agent hide and seek **March 2021 – June 2021**
Project at JetBrains Research. The goal of project was to use Unity Engine to reproduce results from "Emergent Tool Use From Multi-Agent Autocurricula" paper by OpenAI where reinforcement learning agents learned to use different tools to maximize their reward while playing competitive game. One of the environments was fully replicated but desired behavior was obtained only in simplified setting because more complicated setups require vast computations. *Skills*: C#, Unity, Unity ML agents.

Ethnic classification of names and surnames **October 2020 – April 2021**
Research project at Yandex School of Data Analysis on Russian names ethnic classification problem. The goal was to create machine learning algorithm which predicts person's ethnicity by name. My job was to find the best fitting algorithm for the this problem. *Skills*: Python, PyTorch, scikit-learn, pandas, XGBoost, CatBoost, FastText.

RELEVANT SKILLS

Knowledge: Algorithms and Data Structures, Computer Graphics, Data Science, Machine Learning, Deep Learning, Reinforcement Learning. Basics of Android Programming and Functional Programming.
Programming Languages: C, C++, Python, Java, Bash. Basics of Haskell (classroom experience), C# and Kotlin.
Tools and technologies: Git, SVN, GNU Make, CMake, gcc, Django, scikit-learn, pandas, PyTorch, TensorFlow 1, LaTeX.

ACHIEVEMENTS

5th All-Russian Student Olympiad "Ya – professional" **2022**
Winner in the AI track among undergraduate students, 17th place out of 2000+ participants

"Metric Learning for Facial Descriptors" hackathon by HUAWEI Russian Research Institute at 5th RAAI Summer School **July 2019**
2nd place out of 29 participants