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Competitions

MIT REALITY HACK – JAN 2020

Won 1st place in AR and Best in Tools with draft360, a tool for collaborative XR prototyping.

NATIONAL TECHNOLOGY OLYMPIAD, VIRTUAL REALITY – NOV 2019 - FEB 2020

Finalist, didn't go to the finals due to COVID.

ITMO MLHACK – MAR 2020

Won 1st place with a simple price forecasting model.

CHERRY JAM – JUL 2020

Participant, made a platformer game with a portal mechanic.

PULKOVO HACK – AUG 2020

Won 1st place by applying the Hungarian algorithm to airplane scheduling. Invited to an internship at the Pulkovo airport.

MULTITECHBATTLE – NOV 2020

Finalist, designed and programmed a system for controlling the growth of algae.

BILET HACK – NOV 2020

Participant, analyzed and visualized data from users of a professional orientation platform.

AGROHACK – NOV 2020

Finalist, trained an AI model and built an interface for classifying tree diseases from images.

RUSSIAN SCHOOL OLYMPIAD – FEB 2021

Regional winner in Computer Science.

BV SOCHI SIRIUS COMPETITION – APR 2021

Reached the second stage presenting a 2017 project about evolving neural networks.

NATIONAL TECHNOLOGY OLYMPIAD, BD&ML – NOV 2020 - FEB 2021

1st place winner, trained an ML model for forecasting the "Coolness" parameter in an Ion Beam Assisted Deposition plant.

NATIONAL TECHNOLOGY OLYMPIAD, ARTIFICIAL INTELLIGENCE – NOV 2020 - MAR 2021

1st place winner, trained an ensemble of AI models for natural language understanding in Russian. The solution holds first place on the RussianSuperGLUE benchmark since May 2021, outperforming systems from Yandex and SberDevices.

NATIONAL TECHNOLOGY OLYMPIAD, INTELLIGENT ROBOTICS SYSTEMS – NOV 2020 - MAR 2021

Finalist, built a navigation system for controlling robots in a maze.

RUCODE 3 – MAR 2021

2nd place in a 2-week long hackathon. Created a recommendation system based on ratings from MyAnimeList.

ASAP ESPRESSO JAM – MAY 2021

Participant, made a game called "24108".

LEADERSOFDIGITAL SUMMER SCHOOL – JUL 2021

1st place, built a system for identifying polar bears on aerial photos.

ARTIFICIAL INTELLIGENCE INTERNATIONAL JUNIOR CONTEST – FEB 2021 - OCT 2021

1st place winner in Creative AI, created a set of tools for creating narrated video stories using AI with minimal human input.

RUSSIAN AI OLYMPIAD – NOV 2021

Finalist, solved 4 tasks connected to AI.

WORLDSKILLS RUSSIA, NEURAL INTERFACE DESIGN – FEB 2022 - SEP 2022

2nd place in nationals, built a prototype for a robotic hand prosthetic controlled with electromyography.

RUSSIAN SCHOOL OLYMPIAD – FEB 2022

Regional prize winner in Economics, Computer Science and English.

ITMO OPEN – MAR 2022

Finalist in a national Computer Science olympiad hosted by the ITMO university.

BR41N.IO HACK – MAY 2022

1st place winner in ECoG hand pose estimation, applied topological data analysis to data from a brain chip.

AICROWD HTREC – JUN 2022

1st place winner in Handwritten Paleographic Text Recognition Correction. Trained 3 models that corrected errors in automatic transcriptions of Byzantine manuscripts. The results were summarized in a research paper. The work will be presented in a NeurIPS workshop in Venice November 2022.

DIGITALSKILLS, NEURAL INTERFACE DESIGN – SEP 2022

2nd place, built a prototype for a robotic hand prosthetic controlled with electromyography and analyzed electrocardiogram data.

MSU SCIENTISTS OF THE FUTURE – SEP-OCT 2022

Finalist, submitted two projects developed in the 2021-2022 school year.

Conferences

GDG NOVOSIBIRSK – NOV 2018 – PARTICIPANT

AI JOURNEY – NOV 2019 – PARTICIPANT

AWE XR – MAY 2020 – PARTICIPANT & SPEAKER

AI JOURNEY – DEC 2020 – PARTICIPANT

SPIEF – JUN 2021 – PARTICIPANT & SPEAKER

AI JOURNEY – NOV 2021 – PARTICIPANT

KAZAN EXPO – SEP 2022 – PARTICIPANT

Projects

AAA-PY – OCT 2018

Rewrote the build system for the Arcane Algorithm Archive, a collaborative effort to collect code samples in dozens of languages for common mathematical algorithms. Still being maintained.

GO-CRITIC VSCODE – NOV 2018

Created an editor extension for open-source code checking tool go-critic. ~30k downloads, currently being maintained by GalvinGao.

EIX.JS – APR 2019

Started the development of a game engine in JavaScript. Currently being maintained by Matei Adriel.

VOICE CONVERSION – 2020

Researched methods for translating speech from one voice to another using deep learning. Settled on using the Mellotron text-to-speech model in 2021.

TELEGRAM CHAT VISUALISATION – JAN 2021

Developed an application for visualizing chat activity in the social network Telegram.

GPT INCORRECT QUOTES GENERATOR – APR 2021

Created a version of Incorrect Quotes Generator, an app popular on Tumblr in 2021. The quotes are from a GPT text generator trained on real posts.

MASKED VQGAN+CLIP – MAY 2021

Created an implementation of image editing for VQGAN+CLIP, the first popular public text-to-image model. The code was used in the official publication for VQGAN+CLIP (cited by 18 at the moment of writing).

SUPER CREATIVE AI – JUL 2021

Co-hosted a Russian-language TikTok account that posted videos generated by AI. In its four-day run the account accumulated over 1000 likes.

BOLSHAYA PEREMENA WEB APP – AUG 2021

Developed a social media app that calculates the probability of getting into the semifinals of a national competition. The app was shut down after being used by 5% of the semifinalists.

OPTIMIZED RUDALL-E – NOV 2021

Implemented an optimization for ruDALL-E, one of the first public text-to-image generation systems. A change in the model code sped up generations on the main website by over 10 times. It was used over 10 million times and generated 205 million images. The change is likely also being used by the commercial SberPortal.

LOOKING GLASS – NOV 2021 - DEC 2021

Contributed to a web app using ruDALL-E. Incorporated code from Optimized ruDALL-E. Made saving use megabytes instead of gigabytes of space. Implemented a feature for generating images at arbitrary resolution.

RUCLIP-SB – NOV 2021

Wrote evaluation pipelines for ruCLIP-SB, a lightweight text-image model developed by NTO participants.

TEXT2VOXELS AND PULSAR+CLIP – DEC 2021, JUL 2022

Created the first publicly available software for generating 3D shapes from text using CLIP competitive with an unreleased model by Google. Generations have been featured at DEFCON 2022. A version of Text2Voxels has been archived in the Phygital library of open-source AI pipelines.

NIGHTMAREAI COGVIDEO IMAGE PROMPTS – JUL 2022

Implemented image prompt functionality for an online demo for text-to-video with over 9 thousand runs.

DALL-E 6D – JUL 2022

Created an app for OpenAI's DALL-E image generator that lets users create 3D animations with it.

CONR WEB DEMO – JUL 2022

Developed a web interface for CoNR, a character animation neural network trained by Megvii Research. Featured by Huggingface employee.

CONR – AUG 2022

Developed a web interface for CoNR, a character animation neural network trained by Megvii Research. Featured by Huggingface employee.

CLIP NSDECODER – JUL, AUG 2022

Analyzed brain scans of people watching images. Trained an AI model that could predict text captions for images a person was seeing from fMRI captures alone. The work was done together with Paul Scotti, a PhD student at Princeton.

Summer schools

SPBU TECH ENTREPRENEURSHIP OLYMPIAD – JUN 2021

Worked on a case from Dodo Pizza. Helped present MyProducts, a delivery startup.

NEUROCAMP – JUN 2022

Developed a keyboard using eye-tracking. Became a participant in a study by Skolkovo University.

NEUROCAMP (RICE UNIVERSITY) – JUL 2022

MIPT START TO INNOVATE – AUG 2022

Started a project applying neuroscience to marketing. Learned to record EEG data to run an experiment with P300.

Experience

MEMBER, ALGORITHM ARCHIVISTS – 2019-PRESENT

FOUNDER, DRAFT360 – 2020

MEMBER, ELEUTHER AI – 2021-PRESENT

I am a member of EleutherAI, an open AI research collective. I have contributed to the public release of VQGAN+CLIP and am doing work on the Minetest Alignment project.

INTERN, SBERBANK – AUGUST 2021

This was an internship at Sberbank, a Russian IT and financial company. I worked on researching recommendation systems together with another high school student.

ORGANIZER, MIT REALITY HACK – 2021-2022

Developed a prototype for the Metaverse website for MIT Reality Hack 2022.

AI AMBASSADOR, SBER AI – 2022-PRESENT

INTERN, STABILITY – AUGUST 2022-PRESENT

I am working at DeepFloyd, a division of Stability AI. It is a company that is developing open source modular AI models. The research I am doing is not yet public.

Education

School #6, St. Petersburg – 2019-2021

School #4 of Cousteau, St. Petersburg – 2021-2023