

Aleksei Kalinov

mousebaiker.github.io ◊ mousebaiker@gmail.com

EXPERIENCE

Deep Learning Research Intern, **NVIDIA**

USA (Remote), February – August 2021

Proposed CarneliNet, a new speech recognition model with adjustable inference resource requirements.

Sped up training of flagship model by 30% with efficient masking and automatic mixed precision tweaks.

Contributor to the NVIDIA's NeMo open source project for conversational AI: github.com/nvidia/NeMo

<https://arxiv.org/abs/2107.10708>

PyTorch, CUDA

Software Engineering Intern, **Google**

Android

UK (Remote), June – August 2020

Designed and launched a pipeline to perform a continuous static code analysis of 2 Million Play Store apps that helps to drive non-SDK interface restrictions. Participated in Inclusive Language Fix It

<https://android-review.googlesource.com/q/author:akalinov>

Java, C++, MapReduce

Marketing Works

USA, July – October 2019

Increased relevance of recommendations in the internal marketing tool by 6% by inferring missing metadata of hundreds of documents with modern DL approaches.

Go, Python, TensorFlow, SQL, App Engine

Google Maps

USA, June – September 2018

Designed and implemented a library to transform 3D data into format suitable for existing Street View Deep Learning models. Increased throughput of a distributed 3D rendering pipeline by 11%.

C++, OpenGL

YouTube

USA, July – September 2017

Developed a classification model for the YouTube content rating system based on text and sound features.

Launched the model as a real-time production microservice.

Python, Tensorflow, C++

YouTube

Switzerland, July – September 2016

Designed experiments and implemented YouTube-scale distributed pipelines to quantify importance of graph features for YouTube language classifiers.

C++, MapReduce, TensorFlow, SQL

SWE Intern in R&D department, **CGF Studio**

Russia, December 2017 – May 2018

Implemented & compared several physically based skin deformation simulation models for 3D characters.

<https://tinyurl.com/muscle-deformation-drive>

Houdini, VEX, Python

EDUCATION

Institute of Science and Technology Austria

2021 – Present

PhD in Computer Graphics and Physics Simulation

Skolkovo Institute of Science and Technology

2019 – 2021, GPA: 5.0/5.0

MSc in Mathematics and Computer Science, Data Science concentration

National Research University Higher School of Economics

2015 – 2019, GPA: 9.08/10.0

BSc in Applied Mathematics and Informatics with Honors, Machine Learning track, Minor in Physics

PROJECTS

"We are not alone" fragment shader

Designed a 3D dynamic scene and implemented it from scratch completely in a fragment shader, including raymarching engine with SDF support, procedurally generated terrain and lighting with soft-shadows.

<https://www.shadertoy.com/view/WllyDn>

OpenGL shading language

Direct Simulation Monte Carlo for new regimes in aggregation-fragmentation kinetics

Extended Direct Simulation Monte Carlo methods to aggregation systems with collisional fragmentation.

Confirmed the emergence of steady density oscillations and proved their stability with respect to noise.

<https://arxiv.org/abs/2103.09481v2> <https://github.com/mousebaiker/Smol0sc> *Python, CUDA*

AWARDS, ACHIEVEMENTS AND CONTRIBUTIONS

The Ilya Segalovich Scholarship Yandex and HSE Faculty of Computer Science stipend. 2017, 2018.

NeMo (<https://github.com/nvidia/nemo>): New ASR model and efficiency improvements.

Open-source Faker (<https://github.com/joke2k/faker/>): Russian localization contributions.

Android (username: *akalinov*): Inclusive language contributions.