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Artem Makoyan

Languages: Python3, C++, C, Go
github.com/MakArtKar
codeforces.com/profile/MakArtKar
leetcode.com/MakArtKar

SKILLS

Libraries	Pytorch, Hydra, DVC, WandB, OpenCV, Sklearn, Numpy, Pandas, Scipy, ONNX, Matplotlib, Optuna
Tools	SQL, Linux, Bash, Git, \LaTeX , Markdown

TECHNICAL EXPERIENCE

Yandex	Jun 2023 — Present
<i>Middle ML Engineer/ Geo services</i>	<i>Python 3, PyTorch, Hydra, OpenCV, Shapely, YQL, YT</i>

- Map roads segmentation from aerophotos with IoU 0.93
- Roads post-processing algorithms - reduced number of artifacts from 10% → 0.02% and improved visual quality.
- Safety islands segmentation and vectorization with IoU 0.37

Sber Devices	Jul 2022 — Jun 2023
<i>Middle ML Engineer/ Computer Vision Platform</i>	<i>Python 3, C++, PyTorch, Hydra, DVC, OpenCV, ONNX, torch_pruning</i>

- Background removal for video conferencing with 0.98 dice metric
- Improved human segmentation quality working on segmentation pipeline, pruned model getting 1.5x speed acceleration
- Improved visual quality with post-processing algorithms: aligning the lighting and smoothing out the border.
- Trained 700KB model for pay card border segmentation and developed C++ inference pipeline in multiplatform mobile SDK

Yandex	Jul 2021 — Oct 2021
<i>ML Developer intern / VR Team with V. Lempitsky</i>	<i>Python 3, PyTorch, Tensorboard</i>

- Trained model that predicts human's alpha mask to improve the quality of a VR scene
- Prepared datasets with human alpha masks, read and compared papers on an alpha matting problem
- Trained an improved [FBA Matting](#) net without using trimaps

Samsung R&D Department	Nov 2020 — June 2021
<i>ML Research Intern / Mobile Authentication</i>	<i>Python 3, PyTorch, Bash, Numpy, Pandas, Sklearn, Tslearn</i>

- Worked on a pipeline for mobile phone authentication by user's motion patterns with $82.2\% \pm 9\%$ accuracy - [paper](#).
- Collected, preprocessed and handled data from devices. Used ML and DL models for authentication, got 70% accuracy baseline

Huawei	Aug 2020 — Oct 2020
<i>Software Engineer Intern / Software performance engineering team</i>	<i>C, Octave, Catch2</i>

- Worked on a framework for faster developing open-source 5G wireless library by developing a testing platform on C and Octave

EDUCATION

Bachelor in Computer Science, GPA 8.7/10, Higher School of Economics, Moscow, Russia	Sep 2019 — Jun 2024
Applied Mathematics and Information Science	

Master's Equivalent, Yandex School of Data Analysis, Data Science, Russia	Sep 2020 — May 2022
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Relevant courses:

- Machine Learning, Deep Learning, Deep Vision and Graphics, Computer Vision, 3D Computer Vision, NLP, Generative Models, RL
- Python, C++, Go, Algorithms and Data Structures
- Bayes Methods in ML, Optimization Methods in ML, Matrix Calculations, Statistics, Linear algebra, Probability theory

PROJECTS

Telegram LLM QA bot	Jun 2023 — Aug 2023
→ Developed tg bot to answer on questions gibing it the chat context	<i>Python 3, LangChain, HuggingFace, aiogram</i>

- Researched different LLM models, developed different types of LangChain pipeline (stuff, rerank, map reduce, refine) with them.

Automatic Detection of Means of Transportation on 3d Cargo Models	Dec 2021 — June 2022
→ Developed model for cloud segmentation with 0.95 IoU for cargo	<i>Python 3, Pytorch, PyTorch3D</i>

- Calibrated cameras for cargo scanning, prepared data, implemented ESANet model

Automatic computer activity monitoring	Aug 2020 — Sep 2020
→ Developed Windows application allowing automatic employee performance monitoring and analysing	<i>C++, GRPC, ProtoBuf</i>

- Implemented on C++ using grpc and protobuf for data transfer, access to information by WinAPI

COMPETITIONS

- **Top 8%** in Google Hash Code. **Top 50** in Google Kick Start. **Top 350 (top 0.8%)** in Google Code Jam Feb, May, June 2020
- Awards in All-Russian Olympiad: 33rd place in **Informatics** and 8th place in **Maths** over 20000 participants Apr 2018, 2019