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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

Middle ML Engineer/ Geo services   **Jun 2023 — Present**
Yandex   *Python 3, PyTorch, Hydra*

→Automatic maps markup
- Safety islands detection from aerophotos, mask to polygons post processing.

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

→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.
→Pay card localization
- Trained 700KB model for pay card border segmentation
- Developed C++ inference pipeline in multiplatform mobile SDK

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

→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

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

→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

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

→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
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   *Python 3, LangChain, HuggingFace, aiogram*
- 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   *Python 3, Pytorch, PyTorch3D*
- 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   *C++, GRPC, ProtoBuf*
- 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