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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

Education

Bachelor in Computer Science, GPA 8.68/10, *Higher School of Economics, Moscow, Russia* Sep 2019 — Jun 2024
Applied Mathematics and Information Science

- Algebra
- Algorithms and Data Structures
- Probability Theory and Statistics
- Discrete Mathematics
- Linear Algebra and Geometry
- Operating Systems
- Logic
- Matrix Computations
- Optimization in ML
- Calculus
- NLP

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

- Machine Learning
- Deep Learning
- Deep Vision and Graphics
- Computer Vision
- 3D Computer Vision
- Natural Language Processing
- Generative Models
- Reinforcement Learning
- Bayes Methods in ML
- Python
- C++

Bachelor, Applied Computer Science (Eng), GPA 86/100, *Neapolis University of Pafos, Paphos, Cyprus* Jan 2023 — Jun 2024
Applied Computer Science

- Innovation and Entrepreneurship
- Software Project Management
- Technical Entrepreneurship
- Interest based communications
- Introduction to Business
- Principles of Cybersecurity
- Advanced Databases Concepts
- Advanced Computer Networks
- Distributed Systems

Technical Experience

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

→Map roads segmentation from aerophotos with IoU 0.93

- Roads post-processing algorithms - reduced number of artifacts from $10\% \to 0.02\%$ and improved visual quality.
- Safety islands segmentation and vectorization with IoU 0.37

Sber Devices **Jul 2022 — Jun 2023**
Middle ML Engineer/ Computer Vision Platform *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.

→Trained 700KB model for pay card border segmentation and developed C++ inference pipeline in multiplatform mobile SDK

Yandex **Jul 2021 — Oct 2021**
ML Developer intern / VR Team ***with V. Lempitsky*** *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

Samsung R&D Department **Nov 2020 — June 2021**
ML Research Intern / Mobile Authentication *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

Projects

Telegram LLM QA bot **Jun 2023 — Aug 2023**
→Developed tg bot to answer on questions from 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

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: 33^{rd} place in **Informatics** and 8^{th} place in **Maths** over 20000 participants Apr 2018, 2019