VADIM TITKO

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ABOUT ME

As a Machine Learning Engineer, I specialize in building systems using Generative AI, Computer Vision and Natural Language Processing. My expertise includes developing web services for Machine Learning models and deploying algorithms on mobile devices. Additionally, I organize meetups for Data Scientists to foster a community of knowledge sharing.

EXPERIENCE

AIBY Nov 2021 - Present

Machine Learning Engineer

- Developed computer vision algorithms based on Stable Diffusion, trained LoRAs and ControlNets. Built vid2vid solutions.
- Developed web services for Machine Learning models and set up CI/CD, Grafana logging, reverse proxy, and HTTPS. Deployed these services on AWS EC2. Deployed Computer Vision algorithms on both mobile devices and cloud services using CoreML, TFLite, ONNX, OpenVINO and AITemplate.
- Developed and trained state-of-the-art object detection, classification, and segmentation models, which were successfully integrated into the product. The integration of these models resulted in an increase in product metrics.
- Implemented mathematical equations solver powered by LLM using LangChain and OpenAI API.

ITechArt Feb 2021 - Nov 2021

Machine Learning Engineer

- Implemented and trained Computer Vision algorithms for the classification and segmentation of 2D and 3D medical images, including CTs and MRIs. Additionally, trained algorithms for the segmentation of surgical instruments in videos of gallbladder removal surgeries.
- Prepared Machine Learning pipelines using MLFlow, Docker, DVC, and PyTorch, resulting in increased team productivity. As a machine learning consultant, participated in coordinating with doctors to develop new functionality.

APRO Software Jan 2020 - Jul 2021

Machine Learning Engineer

- Trained Deep Learning algorithms for image segmentation and deployed them on mobile devices using TFLite for Android and CoreML for iOS. Additionally, built in-house tools for image markup.
- Developed a matching system for an online store selling goods for repair, using rule-based parsers, text embeddings, and dictionaries. Utilized Faiss library to enable efficient similarity search.
- Developed APIs for ML models using Flask and Django frameworks and wrapped them in Docker.

PROJECTS

Brain Tumor Segmentation

GitHub: https://github.com/Vadbeg/brain-tumor-segmentation

Developed a customizable pipeline for training a tumor segmentation model based on MRI. Additionally, provided PyTorch weights and an ONNX conversion script. The models were trained using PyTorch-Lightning, experiments were logged with Weights & Biases.

Colorization CoreML

GitHub: https://github.com/Vadbeg/colorization-coreml

Developed an image colorization project using CoreML, which is based on the siggraph17 model from the Colorful Image Colorization paper. Created a script for image pre- and post-processing as well as model inference.

EDUCATION

Bachelor of Computer Science 2018 - 2022

Belarusian State University of Informatics and Radioelectronics, Department of AI, Minsk, Belarus

Explored classical approaches for building AI systems based on knowledge graphs, as well as machine learning and deep learning algorithms. Completed various coursework projects ranging from web applications to recommendation systems.

SKILLS

Programming languages	Python, Java;
Frameworks	numpy, pandas, diffusers, sklearn, matplotlib, seaborn, OpenCV PyTorch, PyTorch-Lightning, Keras, ONNX, TFLite, AITemplate, LangChain Django, Flask, FastAPI, sqlalchemy;
SQL	PostgreSQL, SQLite, MS SQL, MySQL;
Other	Git, DVC, Docker, Ubuntu, AWS, Azure, LaTeX;
Languages	English (proficient), Polish (proficient), Belarusian (native), Russian (native).