Ihar Filipovich

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Middle Machine Learning Engineer with two years of practical experience in machine learning projects, specializing in Computer Vision and NLP. Have practical knowledge of training and optimizing Large Language models. Additionally, possess a robust understanding of Convolutional Neural Networks (CNNs), Vision Transformers (ViTs), Generative Adversarial Networks (GANs), and Diffusion models, including Stable diffusion, its applications, and downstream tasks.

Skills

Programming languages: PythonGo, C++, Rust.
Frameworks: PyTorch, torch.distributed, torchlightning, huggingface, TensorFlow, BentoML, FastAPI, Flask, scikit-learn, OpenCV, numpy, pandas, catboost, xgboost.
Machine Learning: Computer Vision, Diffusion Models, NLP, Classic ML, Distributed training, Data-Parallel training, Model-Parallel training, Model deployment, Model distillation.
Tools: TensorRT, ONNX, docker, docker-compose, git, bash, Prometheus, gRPC.
Math: Optimization, Linear algebra, Functional Analysis, Control Theory, Calculus, Probability theory, Statistics.

Work Experience

Gradient & Persona: AI Photo & Video mobile editors, *San Francisco, Remote*
Middle Computer Vision Engineer *Aug. 2022 – Present.*

- Make a huge research on image generation, especially with Stable Diffusion model. Played a key role in developing brand-new method of encoding into its latent space.
- Conduct various experiments with different Stable Diffusion down-stream tasks like custom fine-tuning, introduction of new modules, curating task-specific datasets, papers implementation.
- Accelerated Stable Diffusion inference on different GPUs by more than 200%.
- Generate and curate custom datasets. Use CLIP, BLIP, StyleGAN, pix2pix models for processings. Resulted in obtaining datasets which helped to train new models.
- Train dozens of new beauty filters, develop new loss functions for training. Resulted in better quality of model outputs.
- Developed and optimized face recognition networks to increase model quality and accuracy through novel techniques.
- Designed, implemented and bring to production methods for conditioning generative models.
- Deploy models both on IOS and server using torch.jit and coreml.

Yandex, *Minsk, Belarus*
Software Engineer Intern, Go, Python *Jul. 2021 – Nov. 2021*

- Network Operations Center department.
- Developed the tool for automatic virtual laboratory startup distributed on different virtual machines.

Education

Yandex School of Data analysis, *Moscow, Russia*
Master's degree level Machine Learning developer academic program *Sep. 2020 – Jun. 2022*

- Passed courses: Python, C++, Golang, Algorithms and Data Structures, Machine Learning, Computer Vision, Natural Language Processing, Probability and Statistics, Reinforcement Learning, Efficient DL systems, 3D Computer Vision, Recommendation systems.

Belarusian State University, *Minsk, Belarus*
Bachelor of Computer Science *Sep. 2019 – Jun. 2023*

- Developed a novel method of defense from adversirial attacks as a part of final Thesis.

Publications

CTDA'2022 Computer Technologies and Data Analysis, *Minsk, Belarus*
"Assessing the Vulnerability of AI-based Solutions in Histopathology of Cancer", pp 7-9 *Apr. 2022*

Activities

- **3rd diploma in ICPC 2022 Northern Eurasia Regional Contests** **St.Petersburg, Russia**
- **Educational-Scientific Conference of Students on Recent Methods of ML and Data Analysis** **Minsk, Belarus**
  "Defense from Adversarial Attacks on Deep Neural Networks Using Denoising Nets" *November 2021*
- **Participation in IYPT 2019** **Warsaw, Poland**
- **Participation in IYPT 2018** **Beijing, China**