

Bohdan Ivaniuk-Skulskyi

✉ ivanyuk.bogdan1999@gmail.com

📄 Bogdan Ivanyuk

🌐 Bogdan Ivanyuk

🌀 KyloRen

RESEARCH INTEREST

Computer vision, video processing, efficient neural networks, reinforcement learning, robotics

EDUCATION

National University of Kyiv-Mohyla Academy (NaUKMA)

Kyiv, Ukraine

Master's degree in Applied Mathematics (Honour degree, GPA: 97.45 / 100)

September 2020 – 2022

National University of Kyiv-Mohyla Academy (NaUKMA)

Kyiv, Ukraine

Bachelor's degree in Applied Mathematics (Honour degree, GPA: 93.78 / 100)

September 2016 – May 2020

EXPERIENCE

Cyclope.ai (VINCI Autoroutes)

Paris, France

Machine learning Engineer

January 2023 – Present

Stack: Python, PyTorch, Tensorflow, Darknet, bash, CI/CD

- I'm developing an incident detection system for tunnels and roads. I've already deployed two systems to production. For each project, I went through the process of training object detection models (using YOLO versions 5 and 8) and segmentation models. Additionally, I worked on adapting camera calibration algorithms
- Research-wise, I'm focusing on developing models for object detection, segmentation, and anomaly detection

TietoEvry (Infopulse)

Kyiv, Ukraine

Machine Learning Engineer

October 2021 – Present

Stack: Python, PyTorch, scikit-learn, bash, Triton Inference Server, CI/CD

- Worked on natural language processing tasks: text classification, token classification, and representation learning for text-vision search engine
- Prepared and deployed textual recommendation system using Triton Inference Server. Improved recommendation topK accuracy from 0.56 to 0.81
- Worked on person tracking and re-identification demo
- *Contractor since 2023*

University of Toronto, Wearable Robotics Group

Kyiv, Ukraine (remote)

Machine Learning Research Intern

April 2022 – September 2022

Stack: Python, PyTorch, Tensorflow, scikit-learn, Google Cloud

- Working under the supervision of Dr. Laschowski and Dr. Mihailidis
- Responsible for data preprocessing and video classification model of the StairNet dataset
- Explored various encoder models like MobileNetV2, MobileViT, and EfficientNet, in conjunction with temporal models such as LSTM and Transformer, as well as video models like MoViNet

Samsung Research

Kyiv, Ukraine

Software Engineering Intern (Machine Learning Research)

April 2021 – December 2021

Stack: Python, PyTorch, Tensorflow, Keras, scikit-learn, C++, bash, CI/CD

- Working as part of Intelligent Security Lab team
- Responsible for speaker identification demo preparation in an online learning setting, using Google TRILL model as a base model
- Worked on a audio spoof detection project, where have implemented S-vectors and RawNet with One-class learning loss function to construct more compact embeddings of spoof voices
- Working on compressed video processing using neural networks

Anadea

Kyiv, Ukraine

Machine learning Engineer

March 2020 – October 2021

Stack: Python, PyTorch, Tensorflow, Keras, bash

- Improved image captioning algorithm by combination of Detectron object feature extraction model and length controllable captions generation model
- Improved company name generator using GPT2 fine-tuned model with data pre and post-processing

- Performed social media post duplicate detection method that achieves 0.95 in F1-score

Concorde Capital

Investment Banking Intern

Kyiv, Ukraine

May 2019 – Sep. 2019

- Market research in various spheres (agriculture, IT, heavy industry, logistic) for acquisition purpose
- Preparation of financial reports and pitching presentations

YouScan

Summer Intern

Kyiv, Ukraine

May 2017 – Sep. 2017

- Performed social media data analysis and classification for big multinational companies
- Preparation of social media activity reports

TEACHING EXPERIENCE

National University of Kyiv-Mohyla Academy

Introduction to Machine Learning 2022, 2023 (by O. Ignatenko)

Introduction to Deep Learning 2022 (by O. Ignatenko)

ACADEMIC SERVICE

FIdo.ai - student's organization at the National University of Kyiv-Mohyla Academy

- Developing foundation of Natural Language Processing for Ukrainian language
- Collection of datasets for the Ukrainian language 📄

PUBLICATIONS

Sequential Image Classification of Human-Robot Walking Environments using Temporal Neural Networks 🔄 📄

Bogdan Ivanyuk-Skulskiy, Andrew Garrett Kurbis, Alex Mihailidis, Brokoslaw Laschowski

International Conference on Robotics and Automation, Computer vision for Wearable Robotics workshop (ICRA), 2023

International Conference on Aging, Innovation and Rehabilitation (ICAIR), 2023

Geometric properties of adversarial images 🔄 📄

Bogdan Ivanyuk-Skulskiy, Galyna Kriukova, Andrii Dmytryshyn

Third International Conference Data Stream Mining & Processing (IEEE DSMP), 2020

SELECTED PROJECTS

Tower Defence RL agent 🔄

- An implementation of a classical Tower Defence game, which allows you to play it on your own, and it also includes a gym-like environment for training RL agents

Surviv.io agent 🔄

- Project purpose - the training of an agent that can play battle royal game, with a target to win
- Performed video analytics to detect weapon loot action and detection of the weapon type itself
- Agent control and inference pipeline implementation using selenium

For more projects please refer to this page 🌐

SKILLS

Languages: Ukrainian, Russian, English, French

Programming languages: Python, moderate experience with C++ and Java

Libraries: pandas, NumPy, Matplotlib, PyTorch, Tensorflow, OpenCV, SciPy

ACHIEVEMENTS

Kaggle Competitions Expert (Kaggle)

Quora Insincere Questions Classification - silver medal

Mechanisms of Action (MoA) Prediction - silver medal

Severstal: Steel Defect Detection - silver medal

Scholar of ZAVTRA.UA stipend program of Victor Pinchuk Foundation, 2020