Personal Information

Name and Surname:	*Michał Bortkiewicz*
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Experience

11.2021 - 05.2022

Samsung Research
Deep Learning Engineer
- *Developed containerized Explainable AI tool for sound datasets inspection and model performance checks used across the teams.*
- *Introduced efficient datasets management strategy using DVC and GIT for faster project iterations.*

05.2021 - 10.2021

Airspace Intelligence
Machine Learning Engineer
- *Deployed python microservice using Django REST framework, PostgreSQL, and Docker for taxi time prediction/extrapolation during Irregular Operations at the airport.*
- *Performed code reviews, interviews, and retros in a fast-paced startup environment following agile methodology.*
- *Delivered insightful EDAs of air traffic data using a data science toolkit.*
- *Developed high-quality software using unit testing, containerization, and monitoring in Grafana dashboards.*

10.2018 - 05.2021

Scope Fluidics
Data Scientist
- *Implemented a MIMO deep recurrent model based on ConvLSTM cells for accurate real-time bacteria growth prediction, reducing the binary classification error rate from 10% to 3% and making it possible to infer bacterial growth earlier. The project resulted in the submission of European Patent 21188827.*
- *Introduced MLOps practices in the organization using Azure ML including experiment tracking, model versioning, and drift monitoring.*
- *Deployed a labeling system based on spatio-temporal autoencoder with automatic anomaly tagging that increased the annotating performance of lab technicians.*

07.2018 - 08.2018

SpaceForest
R&D Software Intern
- *Developed extensions for 2D and 3D rocket simulation programs in MATLAB and implementation of naive control system based on PID controller for CARBONARA 2 rocket.*

Education

10.2021 - present

Ph.D. in Computer Science
Research topic: Continual Learning
Warsaw University of Technology, Faculty of Electronics and Information Technology

10.2019 - 02.2021

M.S. in Data Science (4.57/5)
THESIS: Autoencoder Based Methods for Bacteria Growth Detection and Anomaly Classification in Low-Resolution Image Sequences (in English)
Warsaw University of Technology, Faculty of Mathematics and Information Science

Erasmus Semester Exchange
Master in Artificial Intelligence, Universitat Politècnica de Catalunya and Universitat de Barcelona

10.2015 - 02.2019

B.E. in Automation and Robotics (4.42/5)
THESIS: Multisensor Data Fusion from Sensors with Different Sampling Time (in Polish)
Warsaw University of Technology, Faculty of Power and Aeronautical Engineering

Patents and papers

Patents
European Patent 21188827, "Method and system for prediction of microorganism growth using artificial intelligence", July 30, 2021
Papers
Stanisław Pawlak, Filip Szatkowski, Michał Bortkiewicz, Jan Dubiński, Tomasz Trzciński, "Progressive Latent Replay for efficient Generative Rehearsal"
https://arxiv.org/abs/2207.01562

Certificates

- *Coursera: Deep Learning Specialization*
- *IELTS - Grade 7.5*

Languages

Polish - Native, English - Proficient, Russian - Basic

Skills

- ***Commercial experience** with video, image, audio, and tabular data processing and modeling, including object detection/classification, sound recognition/tagging*
- ***Python:** Pandas, Numpy, Matplotlib, SciPy OpenCV, Scikit, Optuna, Multiprocessing, Logging, PyTest, Django, etc.*
- ***Machine Learning:** feature engineering, preprocessing, EDA, model selection, regression, classification, clustering, anomaly detection*
- ***Deep Learning:** TensorFlow 2, PyTorch, strong mathematical understanding of neural architectures including CNNs, RNNs, Transformers, Autoencoders, CL scenarios, basic knowledge of GNNs, GANs, and Value/Policy-based methods*
- ***Databases:** SQL, MongoDB (basic)*
- ***Dev Tools and Cloud:** git, Docker, Jira, GCP*
- ***MLOps:** DVC, Weights and Biases, TensorBoard*

Hobbies

AI, Physics, Architecture, Guitar, Kickboxing