Tomasz Hawro

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EDUCATION

- **Wrocław University of Science and Technology**   Wrocław, Poland
  Bachelor's degree - Biomedical Engineering, Medical Informatics (Grade 5.5)   *2017 - 2021*
- **Wrocław University of Science and Technology**   Wrocław, Poland
  Master's degree - Artificial Inteligence (Grade 5.5)   *2021 - 2023*

SKILLS SUMMARY

- **Languages:**   Python, Java, JavaScript, SQL, Android.
- **Libraries:**   PyTorch, PyTorch Lightning, NumPy, Matplotlib, Optuna, scikit-learn, SciPy, plotly, OpenCV, React.
- **Tools:**   ONNX, GIT, Docker, Linux, MLFlow, WandB, DVC, AutoML, Streamlit, Gradio, Hydra, Jupyter.
- **Other:**   Solid knowledge of classical machine learning and neural networks algorithms.

EXPERIENCE

- **BonaSoft**
  Python Developer   *Mar 2021 - Jul 2021*
  - **Backend development**: Implementation of REST API backend for a website. **Tech**: Python, Django, Swagger.
  - **Unit tests**: Implementation of unit tests for REST API calls. **Tech**: Python, Django.

- **MX Labs**
  Machine Learning Engineer   *Jul 2021 - Jul 2023*
  - **Deep Learning (DL)**: Implementation of multimodal Deep Neural Networks for blood pressure estimation (modalities: bio signals, face video, metadata). **Tech**: PyTorch, PyTorch Lightning.
  - **DL**: Implementation of lightweight CNN architectures for face metadata extraction. **Tech**: PyTorch.
  - **Productization**: Models productization from PyTorch research phase to ONNX model applicable in C++. **Tech**: PyTorch, ONNX.
  - **Research**: Versatile research on ML and DL approaches for blood pressure estimation based on PPG signals.
  - **Feature Engineering**: Implementation of feature extraction algorithms for the PPG signal. **Tech**: NumPy, SciPy.
  - **AutoML**: Optimizing ML models and preprocessing pipelines with Optuna. **Tech**: Optuna, Joblib, scikit-learn.

- **Vestigit**
  Artificial Intelligence Engineer   *Jul 2023 - Present*
  - **Research**: Versatile research on classical and DL approaches for efficient DL-based video watermarking solutions.
  - **DL**: Implementation and training of Convolutional Neural Networks (CNN) architectures for image segmentation and object detection.

PROJECTS

- **YOLOv1 from scratch**: Implementation and training of YOLOv1 architecture written in PyTorch. **Tech**: Python, PyTorch, mlflow.
- **YOLOv8 Digits detection**: Handwritten digits detection using a YOLOv8 model trained on a custom dataset (demo available online). **Tech**: Python, PyTorch, PyTorch Lightning, ONNX, ONNX Runtime, React.
- **Bachelor thesis**: Categorization of auditory evoked potentials using machine learning. **Tech**: Python, scikit-learn, pandas, NumPy, SciPy.
- **Master thesis**: The influence of medical signals representation on machine learning models results. **Tech**: Python, PyTorch, PyTorch Lightning, scikit-learn, pandas, NumPy, SciPy.
- **SqueezeNet Flowers classification**: Classification of 102 flower species using SqueezeNet architecture pretrained on ImageNet (demo available online). **Tech**: Python, PyTorch, PyTorch Lightning, Docker, Gradio.
- **GeDa**: Python package that helps to download and arrange the data for ML projects. **Tech**: Python, OpenCV.
- **GlucoPred**: Implementation of feature extraction and machine learning pipelines for glucose level estimation based on PPG, Accelerometer, EDA and Temperature biomedical signals. **Tech**: Python, NumPy, SciPy, PyTorch, scikit-learn, pandas

HONORS AND AWARDS

- Winning the Dean's Award twice.
- Winning the poster session competition at *OMatKo!!!* conference - November, 2021.
- Winning the competition of IT projects of the AI Tech Summer School during the poster session - May, 2022.

LANGUAGES

- **Polish**: Native
- **English**: Proficient