# Piotr Woliński

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## Professional Experience

**Sika AG** | Zürich, Switzerland — 07/2024 - Present
***Working Student Data Engineer*** — *Python, FastAPI, Machine Learning, Data Structures, Git, Leadership*

- **Taught best python practices by leading three interactive sessions** with other students, resulting in their deepened understanding about path handling, enums and environment management
- Showed feasibility of comparing chemical products similarity using embedding models by delivering a convenient PoC

**Verity AG** | Zürich, Switzerland — 08/2023 - 06/2024
***Working Student Software Engineer*** — *Python, FastAPI, Data Structures, AWS, Git, Unix*

- **Reduced data quality processes complexity** by integrating a proximity based clustering into existing 3D tool to allow toggling between relevant and irrelevant parts of the visualization
- **Lowered time spent on report creation by 90%** by developing a custom tool to streamline the process using templates
- Reduced technical debt in large, client-facing REST API by refactoring it using best python practices
- Increased productivity of the solution engineers by developing multiple optimizations and features for the data quality pipeline measured by the positive feedback after every new release

**DeepTale AI** | Poznań, Poland — 02/2023 - 05/2023
***Junior Machine Learning Engineer*** — *Python, FastAPI, JavaScript, Vue, GCP, REST, Docker, Git, Unix*

- **Allowed QA team to iterate on the designs up to 4 times faster** than before by developing a complex web app serving as a user-friendly GUI for the custom GAN model
- **Led the integration of the new service** into existing architecture by enhancing the internal API
- Enhanced internal API by developing important redirecting endpoints leading to easy integration of a new tool

**STX Next** | Gdańsk, Poland — 07/2022 - 01/2023
***Python Developer*** — *Python, Pandas, Plotly, SQLAlchemy, Django, Git*

- Brought back client data integrity by resolving a complex bug in their data pipelines

**Intel Corp** | Gdańsk, Poland — 10/2021 - 06/2022
***Deep Learning Software Engineer Intern*** — *C++, Python, gdb, Machine Learning, Git*

- **Optimized MXNet Deep Learning framework** for Intel CPUs by integrating new operators using Intel oneAPI
- **Improved interpretability of DNNs** by unifying inference (including quantized) graph models with base ones
- Extended sets of allowed activation functions for certain operators

**Intel Corp** | Gdańsk, Poland — 07/2021 - 09/2021
***Software Developer Intern*** — *Python, Flask, JavaScript, Vue, Docker, MongoDB, Data Structures, Git*

## Education

**University of Zürich** — 09/2023 - 12/2025
MSc. of Computer Science | Major in Data Science | GPA: 5.0/6
Focused on Computer Vision and supporting infrastructure, as well as Software Engineering

**Gdańsk University of Technology** — 10/2019 - 02/2023
BSc. of Engineering in Computer Science | Computer Systems Architecture | GPA: 4.45/5

- **Obtained scholarship for top 8% of the students two years in a row**
- Contributed to the studies organization by **being the student representatives throughout whole studies**, responsible for connecting students with the university administration
- Prepared a project for a university civic budget which was selected for realisation from more than 20 others

## Relevant coursework

Deep Learning, Computer Vision (ETH course), Vision Algorithms for Mobile Robotics, Reinforcement Learning, Vision Based Drone Flight, Systems for Data Science, Advanced Software Engineering

## Skills

**Programming languages:**
Python, C++, C, JavaScript, Rust (still learning)

**Technologies & Tools:**
FastAPI, Pydantic, PyTorch, Pandas, OpenCV, Numpy, Vue, Git, Linux, Docker

**Soft skills:**
Outstanding communication, mentoring, collaboration, time management

**Other:**
Machine Learning, Computer Vision, Data Structures, System Design

## Projects

**Perception Freelancer for the AMZ Racing** 10/2024 - Present

*Python, C++, ROS2, Computer Vision, Git*

- Working on improving the robustness of the perception pipeline by upgrading the cone detection models
- Intergrating TensorRT runtime into existing pipeline to achieve faster inference on the GPU

**Real-time drone detection** for Vision Based Drone Flight course 09/2024

*Python, OpenCV, ROS2, Computer Vision, Machine Learning, Git, Leadership*

- **Made YOLO learn to detect difficult drone poses** by designing and implementing the synthetic training samples generator pipeline
- Proposed approach for automated image annotation pipeline using knowledge distillation, which **reduced manual work needed by more than 80%**
- **Coordinated team work** inside a group and in the end our model managed to outperform the reference implementation

**Fourier features for high frequency functions - Paper implementation in PyTorch** 06/2024

*Python, PyTorch, Machine Learning*

- Implemented experiments from the paper about Fourier features embeddings to learn one of the key techniques behind the NeRFs
- It allowed me to test my PyTorch skills as the original implementation uses JAX instead

**MicroPython for edge AI inference** 09/2022 - 12/2022

*Python, MicroPython, TensorFlow, ESP32, Computer Vision, Git*

- Collaborative bachelor project which effect was an image recognition device made of two wirelessly connected ESP32 microcontrollers running MicroPython and quantized CNNs

## Leadership and Other Activities

**Faculty Student Council** 10/2019 - 10/2022

- Active member for three years, Vice President of the IT for the last year
- **Secured platinum sponsorship from Intel corp** for a major faculty charity event by actively leading the negotiations
- Boosted students morale by being the main organizer of the three major events at the faculty aimed at students

**Hackathons**

- Won 3rd place competing with 9 other teams at the BEST Career meeting hackathon 2022. Contributed to team success by efficiently handling image processing tasks
- Scored 4th out of 13 teams at the AI Games 2022 in Aircraft Trajectory Prediction Challenge. Skilfully handled data processing what allowed my team to move forward and work on the next challenges

**Certificates**

- Fundamentals of Accelerated Computing with CUDA Python, issued by NVIDIA

## Languages

Polish - Native | English - C1 | German - A2/B1

## Hobbies

Strength training, bouldering, custom keyboards, FPV drones, home lab, computer science, self development, books