Mateusz Kojro

Basic Information

Citizenship	Polish
Email	mateuszkojro@outlook.com
LinkedIn	linkedin.com/in/mateuszkojro
GitHub	github.com/mateuszkojro
Website	mateuszkojro.com
Areas of expertise	* Computer Vision & Machine Learning * Data analysis and visualization in Python (Pandas, SciPy, OpenCV, TensorFlow) * Software Design and Engineering in Python, GO and C++
Competent with:	R, MATLAB, Julia, CMake, Docker, Git, Kubernetes, GCP, React and NodeJS
Fluent in	Polish, English (IELTS Academic Band Score 8)

Experience

Random Science

Remote, August 2023 – Now

- Developing computer vision algorithms aiming to diagnose Postural Abnormalities in Primary School children from video recordings
- Managing a data acquisition campaign involving recording diagnosing 300 children in 4 cities across Poland
- Managing a small team of developers
- Secured VC funding
- Finalists of the 2024 ING Startup Challenge

GMV Innovating Solutions

Warsaw (hybrid), May 2023 – November 2023

- Developing C++ based digital-twin simulation software for next generation meteorological satellites produced by European Space Agency in collaboration with Eumetsat
- Designing simulator architecture for proposed future satellite system
- Working with technical documents conforming to ECSS standards
- Performance and validation campaigns
- Continuous collaboration with sub-contractors

CERN – ATLAS experiment

Geneva (hybrid), March 2022 – May 2023

- Performance evaluation of Intel DAOS (Distributed Asynchronous Object Storage) as high performance low latency caching system in the context of proposed upgrades for ATLAS detector at the LHC (Large Hadron Collider)
- Developing emulation software integrating with Intel DAOS and allowing for emulating traffic produced by the ATLAS detector (C++)
- Performance analysis, data analysis visualization and presentation using standard Python toolset (Pandas, Seaborn, Panel)
- Performance evaluation campaigns utilizing top 500 rated supercomputer

  (Intel Endeavour cluster)
- Continuous collaboration with Intel R&D team

National Center for Nuclear Research – Cosmic Ray Laboratory

Lodz (Hybrid), May 2021 – February 2022

- Developed a real-time detection system for macroscopic dark matter and meteors during night sky observations in the Utah desert, implementing computer vision algorithms using both classical methods and AI for real-time event detection with Python (Pandas, SciPy, OpenCV, TensorFlow)
- Created an automatic testing and labeling system for algorithm evaluation and ML model training, featuring a Label Studio-integrated backend for manual event preview and evaluation, built with Python (Flask, OpenCV, Matplotlib, Docker)
- Working on in house system monitoring software
- Working in an international research group

Freelance Full-Stack Developer

Remote, June 2020 – November 2021

- Creating and managing website for external company
- Multi-threaded REST server implementation using Golang
- Front-end implementation using React.js with Typescript
- Managing server architecture using Google Cloud

Publications

Primary author

- **Investigation of the Intel DAOS distributed object store in the context of the ATLAS TDAQ Phase II upgrade (POSTER)**

  ATLAS Week poster session (2022-06)
- **Study of high-throughput distributed caching system based of Intel DAOS for ATLAS Phase-II Dataflow (Conference talk)**

  Openlab technical workshop 2023 (2023-03)

Co-author

- **Meteor observation with the DIMS project: sensor calibration and first results**

  Proceedings of the IMC (2021-11)
- **DIMS Experiment for Dark Matter and Interstellar Meteroid Study**

  37th International Cosmic Ray Conference (ICRC2019), volume 37 (2021-07)
- **Characterization of the DIMS system based on astronomical meteor techniques for macroscopic dark matter search**

  37th International Cosmic Ray Conference (ICRC2019), volume 37 (2021-07)
- **Solar Power Supply and Environmental Control System for DIMS Experiment**

  37th International Cosmic Ray Conference (ICRC2019), volume 37 (2021-07)

Education

Bachelor’s Degree in Computer Science

From University of Lodz at the Physics and Applied Informatics department, with specialization in algorithms. Thesis “Detecting States of Attention using an EEG Headset” under supervision of Dr Hab. K. Warda.

- Two-time Rector Scholarship for best students recipient
- Extended machine learning course

  (deep learning, reinforcement learning, decision forests)
- Advanced mathematical methods and statistics courses

Bachelor’s Degree in Physics (2 years of 3 year program)

Suspended due to other opportunities.
At University of Lodz, Physics and Applied Informatics department.

- Extended course of Mathematical Analysis
- Extended course of classical physics and electrodynamics