Damian Sójka

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Professional Experience

Dec 2022 – now

PhD Student, IDEAS NCBR.
- I work on test-time adaptation and computer vision in Continual Machine Learning Group at IDEAS NCBR, a leading Polish R&D center that recently became a member of the ELLIS Society.

Sep 2024 – Nov 2024

Research Internship, ENSTA Paris.
- I worked on improving the reliability of self-supervised monocular depth estimation through test-time adaptation with Prof. David Filliat and Prof. Antoine Manzanera.

Jul 2021 – Nov 2022

Embedded Software Developer, AETHER BIOMEDICAL.
- Software development of bionic hand prosthesis and its accessories.
- Responsible for the software used to log the activity and statistics of the prosthesis usage.
- Development of Qt PC app communicating with hand prosthesis.

Jul 2020 – Sep 2020

Maintenance Department Employee, FARMUTIL HS.
- Inspection, repair and maintenance of production lines.

Aug 2019 – Sep 2019

Apprentice, QUBIQA.
- Assembly of control cabinets and production line machines based on technical documentation.

Education

Jan 2023 – now

PhD in Deep Learning, Poznan University of Technology.
- My research is focused on test-time adaptation and machine perception.
- Supervisors: Prof. Piotr Skrzypczyński and Prof. Michał Nowicki.

Mar 2021 – Sep 2022

MSc in Automatic Control and Robotics, Poznan University of Technology.
- MSc thesis: *Triplet Loss in Haptic Localization of a Walking Robot*.
- Member of a student team building autonomous race car to compete in Formula Student events.
- Final grade: 4.88 / 5.
- Rector's Scholarship for high-achieving students.

Oct 2017 – Feb 2021

BSc in Mechatronics, Poznan University of Technology.
- BSc thesis: *Control of Logistics Tractor Using Artificial Intelligence Methods*.
- Final grade: 4.75 / 5.
- Rector's Scholarship for high-achieving students.

Papers

1. D. Sójka, M. Masana, B. Twardowski, and S. Cygert, "Adaptive monocular depth estimation with masked image consistency", in *Second Workshop on Test-Time Adaptation: Putting Updates to the Test! at ICML 2025*, 2025.
2. D. Sójka, M. Masana, B. Twardowski, and S. Cygert, "Intransigent teachers guide better test-time adaptation students", in *Out-Of-Distribution Generalization in Computer Vision Workshop at European Conference on Computer Vision (ECCV), , 2024*, 2024.
3. D. Sójka, M. R. Nowicki, and P. Skrzypczyński, "Triplet loss-based metric learning for haptic-only robot localization", in *Progress in Polish Artificial Intelligence Research 5 : Proceedings of the 5th Polish Conference on Artificial Intelligence (PP-RAI'2024), 18-20.04.2024, Warsaw, Poland*, 2024, pp. 338–345.
4. D. Sójka, B. Twardowski, T. Trzcinski, and S. Cygert, "Ar-tta: A simple method for real-world continual test-time adaptation", in *35th British Machine Vision Conference 2024, BMVC 2024, Glasgow, UK, November 25-28, 2024*, BMVA, 2024.
5. D. Sójka, M. R. Nowicki, and P. Skrzypczyński, "Learning an efficient terrain representation for haptic localization of a legged robot", in *2023 IEEE International Conference on Robotics and Automation (ICRA)*, IEEE, 2023.

Other Achievements

Presentations

2024 **International Computer Vision Summer School (ICVSS).** Presented a poster "AR-TTA: A Simple Method for Real-World Continual Test-Time Adaptation".

2023 **ML in PL Conference.** Presented a poster "AR-TTA: A Simple Method for Real-World Continual Test-Time Adaptation".

Awards and Grants

2024 Polish National Science Centre PRELUDIUM grant for a research project "Reliable and Efficient Real-World Test-Time Adaptation".

2023 Innovation award and 3rd place in Continual Test Time Adaptation for Semantic Segmentation challenge organized within Visual Continual Learning workshop at ICCV 2023.

Research interests

- My research focuses on deep learning, machine perception, and robotics, with an emphasis on test-time adaptation. I aim to create intelligent, robust perception systems that continuously adapt and acquire new knowledge, possibly advancing lifelong learning in robotics.

Skills

Research Skilled in devising and executing scientific experiments. Knowledge of how to write scientific papers and publish at peer-reviewed conferences.

Teamwork Most of my projects were done in small teams of researchers, and I also have history of effective collaborations within diverse international teams.

Skills (continued)

Programming Proficiency in Python and C, with basic-level skills in C++. Expert-level at PyTorch. Expertise in embedded software development. I have experience working with tools such as Git, Docker, Wandb, ROS, and Linux operating system.

Languages Fluency in English and Polish.