



Mateusz Korycinski

SENIOR RESEARCH ASSISTANT AT NASK PIB

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Education

Doctoral School of Information and Biomedical Technologies at the Polish Academy of Sciences (TIB PAN)

Warsaw, Poland

PhD 2019 - 2024

Doctoral thesis: "A Hybrid Method for Tractography in Neurosurgery using Artificial Neural Networks and Path Search Algorithms".

Adam Mickiewicz University and Poznan University of Technology

Poznan, Poland

MSc, Bioinformatics 2010 - 2012

MSc thesis: "Modelling the structure of CASCADE nuclease complex".

Maria Curie - Skłodowska University

Lublin, Poland

BSc, Biotechnology 2007 - 2010

BSc thesis: "Biological activity of Yerba Mate (*Ilex paraguariensis*) as a key to increased popularity".

Work experience

NASK National Research Institute

Warsaw, Poland

Senior Research Assistant 2017 - Now

- Image processing with deep learning
- Collaboration with the Department of Neurosurgery from the National Oncology Institute (NIO-PIB, Warsaw, Poland) in the development of the Decision Support System for Neurosurgeries.
- Developing production-ready applications in Python (backend)
- **Technical Skills:** Python, PyTorch, NumPy, Matplotlib, Pandas, Scikit-learn, Flask, RestAPI, SQL, NoSQL, Redis, Kafka, Linux, Docker, Kubernetes

Max Planck Institute for Developmental Biology

Tuebingen, Germany

Research assistant 2012 - 2017

- Participating in the research projects in bioinformatics, focusing on the mechanisms of protein evolution.

Projects

AI-MED

Warsaw, Poland

NASK PIB

2020 - Now

- Diffusion MRI analysis and tractography
- AI methods for microelectrode signal processing
- **Technologies:** PyTorch, Dipy, Nibabel, Slicer3D, Pandas, Matplotlib, Numpy, Torchvision
- **Funding:** NASK

KOMTUR

Warsaw, Poland

NASK PIB, AppVerk, Wykop.pl

2021 - 2023

- Classifying images and videos for harmful content
- Classifiers incorporated into an application dedicated to website editors
- **Technologies:** PyTorch, OpenCV, Pandas, Matplotlib, Numpy, Torchvision
- **Funding:** NCBiR

APAKT

Warsaw, Poland

NASK PIB, Warsaw University of Technology, Enamor International

Nov 2021 - Dec 2021

- Detecting illegal materials in the internet, with special focus on CSAM
- Image processing and classification
- **Technologies:** PyTorch, Torchvision, OpenCV, Matplotlib, Numpy
- **Funding:** NCBiR

- National-level platform for the exchange of information about vulnerabilities and threats in cyber security
- Continuous monitoring of the security level of the included entities
- Development of backend applications integrating NPC systems with external products
- **Technologies:** Python, Flask, NoSQL, Apache Kafka, Asynchronous communication
- **Funding:** NCBiR

Publications

Neural fiber prediction with deep learning

Mateusz Korycinski, Konrad A Ciecierski, Ewa Niewiadomska-Szynkiewicz

2022 18th International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), 2022

Tractography Methods in Preoperative Neurosurgical Planning

Mateusz Koryciński, Konrad A Ciecierski

Journal of Telecommunications and Information Technology 3 (2021) pp. 78–85. Instytut Łączności-Państwowy Instytut Badawczy, 2021

Classification of masked image data

Kamila Lis, Mateusz Koryciński, Konrad A Ciecierski

Plos one 16.7 (2021) e0254181. Public Library of Science San Francisco, CA USA, 2021

Some of the most interesting CASP11 targets through the eyes of their authors

Andriy Kryshchak, John Moulton, Arnaud Baslé, Alex Burgin, Timothy K. Craig, Robert A. Edwards, Deborah Fass, Marcus D. Hartmann, Mateusz Korycinski, Richard J. Lewis, Donald Lorimer, Andrei N. Lupas, Janet Newman, Thomas S. Peat, Kurt H. Piepenbrink, Janani Prahlad, Mark J. Raaij, Forest Rohwer, Anca M. Segall, Victor Seguritan, Eric J. Sundberg, Abhimanyu K. Singh, Mark A. Wilson, Torsten Schwede

Proteins: Structure, Function, and Bioinformatics 84.S1 (Sept. 2016) pp. 34–50. John Wiley & Sons, Ltd, 2016

STAC—A New Domain Associated with Transmembrane Solute Transport and Two-Component Signal Transduction Systems

Mateusz Korycinski, Reinhard Albrecht, Astrid Ursinus, Marcus D. Hartmann, Murray Coles, Jörg Martin, Stanislaw Dunin-Horkawicz, Andrei N. Lupas

Journal of Molecular Biology 427.20 (Oct. 2015) pp. 3327–3339. Academic Press, 2015

The Thalidomide-Binding Domain of Cereblon Defines the CULT Domain Family and Is a New Member of the β -Tent Fold

Andrei N. Lupas, Hongbo Zhu, Mateusz Korycinski

PLOS Computational Biology 11.1 (Jan. 2015) e1004023. Public Library of Science, 2015

Conferences

2023	PP-RAI , Polish Conference on Artificial Intelligence organized by the Polish Alliance for the Development of Artificial Intelligence	Lodz, Poland
2022	WiMob , 18th International Conference on Wireless and Mobile Computing, Networking and Communications	Thessaloniki, Greece
2021	MICCAI , 24th International Conference on Medical Image Computing and Computer Assisted Intervention (online)	Strasbourg, France
2015	ISMB ECCB , 23rd Annual International Conference on Intelligent Systems for Molecular Biology, 14th European Conference on Computational Biology	Dublin, Ireland

Languages

Polish	Native
English	Advanced, CEFR level C1
German	Communicative