Mateusz Korycinski, PhD

SENIOR RESEARCH ASSISTANT AT NASK PIB

Sandora Petofiego st. 8/11, 01-917 Warsaw

☎ +48 577 349 486 | ✉ mateusz.korycinski@outlook.com | 🎂 September 5th, 1988 | 🏠 mkorycinski.github.io

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

Warsaw University of Technology   *Warsaw, Poland*

Assistant Professor   *2024 - Now*

- Teaching various courses regarding computer science, medical informatics, networks etc.
- Supervision of a student projects in computer science and medical informatics
- Own research in the field of computer science and medical informatics

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

DNS4EU   *Warszawa, Polska*

NASK PIB, Whalebone   *2024 - Now*

- Analysis of the passive DNS data
- Development of AI models for a semi-automatic phishing detection in the DNS traffic
- **Technologies:** PyTorch, Pandas, Matplotlib, Numpy
- **Funding:** European Union

INKUBATOR   *Warszawa, Polska*

NASK PIB   *2024 - Now*

- Development of the system requirements and architecture
- Implementing microservice system on a Kubernetes cluster
- **Technologies:** Python, PyTorch, Numpy, Torchvision, Docker, Kubernetes, UML
- **Funding:** Ministry of Higher Education from the European funds

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 Cybersecurity Platform (NPC, S46) *Warsaw, Poland*

NASK PIB, Warsaw University of Technology, National Centre for Nuclear Research, National Institute of *Oct 2017 - Dec 2020*
Telecommunications

- 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 Łaczności-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 Kryshtafovych, John Moult, 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