Mikolaj Buchwald, PhD

PYTHON AI DEVELOPER
RESEARCH SCIENTIST

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Personal website
mikolajbuchwald.com

Personal Bio

I specialize in AI-based data and image analysis for applications in medicine and psychophysiology. I have been obtaining financing for international projects from European and U.S. R&D funding agendas.

Specialization

- Technologies: Python, PyTorch, GenAI, OpenCV, Django, R, Java, Spring, Git/JIRA, Confluence
- Infrastructures: AWS, GCP, OpenStack, Oracle Cloud
- Skills: Data wrangling and standardization, advanced analytics, experimental paradigm, large image models, large language models (LLMs), project management, grants and funding acquisition
- Biomedical data: functional magnetic resonance imaging (fMRI), computed tomography (CT), electroencephalography (EEG)

Work Summary

Postdoctoral Scientist

Cedars-Sinai Medical Center
Los Angeles, CA, USA
Department of Artificial Intelligence in Medicine
October 2023 - September 2024

- Developing deep learning AI models for cardiological and radiological sciences
- Generative AI for medical images and radiological descriptions

Poznan Supercomputing and Networking Center, Poland
June 2018 - present

- ML and AI algorithms for medical, scientific, and commercial applications
- XGBoost, quantitative medicine, advanced visualization, MLOps, DevOps
- Advanced data management

Senior AI Engineer

medVC.eu sp. z o.o. (LLC)
March 2022 - present

- AI applications in medical devices
- Visualization of AI results in real-time images

Graphic designer

ProMedia sp. z o.o. (LLC)
November 2011 - August 2012

- Preparing marketing materials and logotypes in Corel and Adobe graphics suites

Education

Adam Mickiewicz University in Poznan, Poland

PhD in Computational Neuroscience
October 2017 - November 2021

- Thesis: *Neural representations of planning bimanual grasps of functional objects*
  - Medical image analysis with ML and AI
  - Neuropsychology
- Head of the PhD Student Council at AMU (2019-2020)

MS in Cognitive Science
October 2012 - June 2017

- Thesis: *Multivariate analysis of functional magnetic resonance data*
  - Graduated with thesis distinguished
- Head of Student Scientific Research Group

Publications (selected)

Michalowska, Buchwald, et al. (2024)
AI for multi-structure incidental findings and mortality prediction on chest CT
Radiology, RSNA

Nogal, Buchwald, et al. (2022)
Endoluminal larynx anatomy model-towards facilitating deep learning and defining standards for medical images evaluation with AI algorithms
Pol. J. Otolaryngology
Copernicus Press

Behnke, Buchwald, et al. (2022)
Psychophysiology of positive and negative emotions, dataset of 1157 cases and 8 biosignals
Scientific Data, Nature Publishing Group

Buchwald, Przybylski, & Króliczak (2018)
Decoding Brain States for Planning Functional Grasps of Tools: A Functional Magnetic Reso-nance Imaging Multivoxel Pattern Analysis Study
Journal of the International Neuropsychological Society
Cambridge University Press

More about me

Blog:
mindyourdata.org

Accounts at:
medium.com
LinkedIn
StackOverflow/StackExchange
Google Scholar