Mikołaj Buchwald

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691-679-194
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Education

2017 - present **PhD student**, *Adam Mickiewicz University in Poznań*, Poland.
Field: Cognitive science and social communication
Dissertation: *Neural substrates underlying planning interactions with bimanual tools: a functional magnetic resonance imaging study*, supervisor: prof. UAM dr hab. Grzegorz Króliczak

2012 - 2017 **Master degree**, *Adam Mickiewicz University in Poznań*, Poland.
Field: Cognitive science
Thesis: *Multi-voxel pattern analyses of neuroimaging data from functional grasp planning: a methodological approach*, supervisor: prof. UAM dr hab. Grzegorz Króliczak

Experience

06/2018 - present **Computer system analyst**, *Poznań Supercomputing and Networking Center*.
Applied research in European Union Framework Programmes

10/2017 - present **PhD Student Council**, *Adam Mickiewicz University in Poznań*.
Institute of Psychology representative

07/2015 - 01/2017 **Undergraduate/PhD position**, *Maestro grant*.
fMRI data acquisition and analysis (praxis and language lateralization, motor control)
NCN *Maestro* grant 2011/02/A/HS6/00174 to Grzegorz Króliczak

11/2012 - 07/2017 **Cognitive Science Engineering Student Research Group**, *Institute of Psychology, Adam Mickiewicz University in Poznań*.
Member since 10/2012, head since 10/2013

11/2011 - 08/2012 **Computer graphic**, *PRO MEDIA Sp. z o.o.*
Preparing logotypes for printing and marketing materials

Languages

English **C1**, written, oral.

German **communicative**, written, oral.

Technologies

Python.
scikit, pandas, stats, matplotlib, multiprocessing

Java.
Spring, Weka

HTML/CSS/JavaScript.
Materialize, Thymeleaf

Linux/OS X.

Jupyter Notebook.

R, SPSS.

LaTeX.

GitHub.
`https://github.com/mikbuch`

Publications

- **Buchwald, M.**, Przybylski, Ł., & Króliczak, G. (2018). Decoding Brain States for Planning Functional Grasps of Tools: A Functional Magnetic Resonance Imaging Multivoxel Pattern Analysis Study. *Journal of the International Neuropsychological Society, 20*(10). doi: 10.1017/S1355617718000590
- Jukiewicz, M.D., **Buchwald, M.**, & Cysewska-Sobusiak, A. (2018). Finding optimal frequency and spatial filters accompanying blind signal separation of EEG data for SSVEP-based BCI. *International Journal of Electronics and Telecommunications, 64*.
- Króliczak, G., **Buchwald, M.**, Potok, W., & Przybylski, Ł. (2018). Ręczność, praksja i język: nowe spojrzenie na delikatną triadę. *Polskie Forum Psychologiczne, 23*(1), 20-32. doi: 10.14656/PFP20180102
- Jukiewicz, M.D., **Buchwald, M.**, & Cysewska-Sobusiak, A. (2017). Usuwanie artefaktów w synganłów sterujących interfejs mózg-komputer. *Poznan University of Technology Academic Journals. Electrical Engineering, 89*, 195-204. doi: 10.21008/j.1897-0737.2017.89.0018
- **Buchwald, M.**, & Jukiewicz, M.D. (2017). Project and evaluation EMG/EOG Human-Computer interface. *Przeglad Elektrotechniczny, 93*(7), 130-133. doi: 10.15199/48.2017.07.28

Conference presentations

- **Buchwald M.**, Przybylski, Ł. & Króliczak, G. (2018). Decoding functional grasps of tools from brain activity: An fMRI Multi-Voxel Pattern Analysis study. Research talk at *Neuronus 2018 IBRO Neuroscience Forum*, Kraków, Poland.
- **Buchwald M.**, Przybylski, Ł. & Króliczak, G. (2016). Planning functional grasps of tools vs. Non-tools: decoding conditions from brain activity. Poster presented at *22nd Annual Meeting of the Organization for Human Brain Mapping*, Geneva, Swizz Confederation
- Jóźwiakowska, M., Roch S., & **Buchwald, M.** (2016). Cocaine abusers' default mode network – group ICA of fMRI data. Poster presented at N*euronus 2016 IBRO & IRUN Neuroscience Forum*, Kraków, Poland.
- **Buchwald M.**, Przybylski, Ł. & Króliczak, G. (2016). Planning functional grasps of tools vs. non-tools: MVPA searchlight analysis. Poster presented at *Neuronus 2016 IBRO & IRUN Neuroscience Forum*, Kraków, Poland.

- **Buchwald, M.**, & Dydio A. (2016). Artificial Neural Network as human reasoning model. Research talk at *7th Cracow Cognitive Science Conference: Intelligence*, Kraków, Poland.
- **Buchwald, M.**, Jóźwiakowska, M., Kaczor, M., Maćkowiak, B., Roch, S., & Biduła, S. (2015). The anatomy of the default mode network: insights from the high quality 3T fMRI dataset. *Poster presented at Neuronus 2015 IBRO & IRUN Neuroscience Forum*, Kraków, Poland
- Roch, S., Kaczor, M., Jóźwiakowska, M., Maćkowiak, B., **Buchwald, M.**, & Biduła, S. (2015). Unrevealing default mode network: spontaneous activity of the brain or organized conceptual processing? Poster presented at *Neuronus 2015 IBRO & IRUN Neuroscience Forum*, Kraków, Poland

Scholarships & Awards

- Scholarship for the best PhD students – granted by the Rector of Adam Mickiewicz University in Poznań (twice: 2017/2018 & 2018/2019)
- Award for the best Master's Thesis in cognitive science from the Director of the Institute of Psychology of Adam Mickiewicz University in Poznań (2017)
- Rector's Scholarships for the best students of Adam Mickiewicz University in Poznań (three years 2014/15 – 2016/17)
- Kościan Country Starost's award for scientific achievements (2016/2017)
- *Neuronus 2015 IBRO & IRUN Neuroscience Forum* award for the best poster presentation
- 3rd place at *KrakRobot 2013* – autonomous Lego NXT robots competition

Interests

Scientific interests	brain-computer interfaces (BCI), praxis skills (skilled manual actions/movement planning), functional magnetic resonance imaging (fMRI), electroencephalography (EEG), galvanic skin response (GSR), eye-tracking, optotrak
Linux-based operating systems	Archlinux and Debian OS
Open-source software	text editors: vim, atom; numerous Python modules for scientific data analysis and visualization, including: nilearn, PyMVPA and nipy (fMRI), python-mne (MEG/EEG); Mendeley – scientific literature management

Consent

Wyrażam zgodę na przetwarzanie moich danych osobowych dla potrzeb niezbędnych do realizacji procesu rekrutacji (zgodnie z Ustawą z dnia 29.08.1997 roku o Ochronie Danych Osobowych; tekst jednolity: Dz. U. 2016 r. poz. 922). Zostałam poinformowany, że wyrażenie zgody jest dobrowolne oraz, że mam prawo do wycofania zgody w dowolnym momencie, a wycofanie zgody nie wpływa na zgodność z prawem przetwarzania, którego dokonano na jej podstawie przed jej wycofaniem.