

CURRICULUM VITAE



Personal Data

Name: Bartosz Jura
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Education

- 2015.10 – 2020.03 PhD studies in Biomedical Engineering at Nalecz Institute of Biocybernetics and Biomedical Engineering, Polish Academy of Sciences, Warsaw, Poland.
- 2013.10 – 2015.09 MSc in Applications of Physics in Biology and Medicine, specialty Neuroinformatics, Faculty of Physics, University of Warsaw, Poland.
- 2010.10 – 2013.09 BSc in Applications of Physics in Biology and Medicine, specialty Neuroinformatics, Faculty of Physics, University of Warsaw, Poland.

Professional Experience

2015.10 – present Nalecz Institute of Biocybernetics and Biomedical Engineering, Polish Academy of Sciences, Warsaw, Poland

Roles:

- 2020.04 – present Research Assistant
2015.10 – 2020.03 PhD Student

Tasks and Activities:

- research of various aspects of information processing in the nervous system
- analysis of behavioral and electrophysiological brain activity data collected in experiments with freely-moving mice/rats
- taking part in performing behavioral and electrophysiological experiments with mice or rats in the paradigms of: spatial navigation and memory formation, observational learning of a spatial discrimination task, observational learning of fear conditioning
- analysis of memory processes in control animals and in an animal model of Alzheimer's disease (double transgenic mice APP/PS1)
- analysis of the effects of treatment with Bexarotene on the parameters of APP/PS1 mice' behavior and electrophysiological brain activity
- analysis of data collected in co-recordings of local field potentials (LFP) and cerebral blood flow imaging with functional near-infrared spectroscopy (fNIRS)
- modeling of neural mechanisms of learning and memory (reward-modulated Hebbian synaptic plasticity, consolidation of memory traces due to Sharp-Wave Ripples in the

hippocampus) using artificial neural networks

Technologies and Tools:

- Matlab, Python 3 (NumPy, SciPy, Matplotlib), NeuroExplorer, Statistica, Inkscape.

2016.04 – 08 Google Summer of Code at International Neuroinformatics Coordinating Facility

Role: Python Developer

Tasks:

- porting parts of the PISAK program to another technology (PISAK 2)

Technologies:

- Python 3, PyQt5, QML.

2014.01 – 2016.04 PISAK Project (Polish Integrative System of Alternative Communication)

Role: Python Developer

Tasks:

- taking part in designing of the architecture of the program developed within the project
- programming
- writing technical documentation
- debugging and conducting peer code reviews
- implementing the options to handle various input devices (including Brain-Computer Interfaces)
- implementing new features in an eyetracking program using webcam (eViacam)

Technologies and Tools:

- Python 3, GObject, SQLAlchemy, JSON, CSS, C++, GitHub, Bitbucket, Redmine.

2013.02 – 2014.01 "Ożarowska" Association

Roles:

- Student Intern
- Python Developer

Tasks:

- work with people with severe motor disabilities
- adjusting assistive devices
- designing and developing educational applications dedicated for training of the basic linguistic skills

Technologies:

- Python 2, wxPython.

Research Internships Abroad

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| 2018.11 – 12 | (2 weeks) | Neurocentre Magendie, Bordeaux, France. |
| 2017.11 | (2 weeks) | Research Center for Interneural Computing, China Medical University Hospital, Taichung, Taiwan. |
| 2016.02 – 04 | (1.5 month) | Institute of Neurodegenerative Diseases, University of Bordeaux, France. |
| 2015.08 | (1 month) | Institute of Neurodegenerative Diseases, University of Bordeaux, France. |

Publications

- 1) Jura, B., Macrez, N., Meyrand, P., and Bem, T. (2019). *Deficit in hippocampal ripples does not preclude spatial memory formation in APP/PS1 mice*. Scientific Reports 9, 20129.
- 2) Jura, B. (2019). *A mechanism of synaptic clock underlying subjective time perception*. Frontiers in Neuroscience 13, 716.
- 3) Bem, T., Jura, B., Bontempi, B., and Meyrand, P. (2018). *Observational learning of a spatial discrimination task: learning from the mistakes of others?* Animal behaviour 135, 85–96.
- 4) Jura, B., Meyrand, P., and Bem, T. (2018). *Observational learning is a vital factor in shaping complex behaviors*. Science Trends 2018. (popular article).

Conference Reports

- 1) Meyrand, P., Jura, B., Bontempi, B., and Bem, T. (2016). *Observational learning of a spatial discrimination task in the rat*. Annual Meeting of the Society for Neuroscience, San Diego, CA, USA.
- 2) Jura, B., Meyrand, P., and Bem, T. (2016). *Sharp-Wave Ripples-associated slow gamma oscillations show cortex region-specific alteration before and after learning in APP/PS1 mice model of Alzheimer's disease*. 6th International Conference Aspects of Neuroscience, Warsaw, Poland.