CURRICULUM VITAE

Personal Data

Name: Bartosz Jura

Email: barbartekjura@gmail.com

Education

2015.10 – 2020.03 PhD in Biomedical Engineering at Naleczi 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 Naleczi 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 a face-tracking 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

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.