JOB OFFER

Position in the project:	Research Assistant 2
Scientific discipline:	Psychological sciences/Neurosciences
Job type (employment contract/stipend):	employment contract
Number of job offers:	1
Remuneration:	6 600 PLN monthly (gross income)
Position starts on:	1 October 2019
Maximum period of contract/ stipend agreement:	3 years
Institution:	Jagiellonian University, Cracow
Project leader:	Jacek Tabor
Project title:	**Bio-inspired artificial neural networks** ***Project is carried out within the TEAM-NET programme of the Foundation for Polish Science***
Project description:	Artificial neural network model was created basing on analogies to biological counterparts, such as a simplified model of the neuron or a system of retinal neurons. Due to the increasing complexity of tasks and problems with the development of effective methods for learning deep neural networks, solutions based on algebraic structures dominate Today, advanced approaches in machine learning such as deep learning shows number of undesirable features, such as forgetfulness, susceptibility to adversarial examples, the requirement for a large training set, and slow learning. Most of these features do not occur in biological systems, thus it

	would be beneficial to take an inspiration from them to help training artificial systems. The aim of the project is to analyze high-level behaviors of biological neural systems and to build innovative artificial models by proposing new paradigms of learning and new architectures of computational models. The Jagiellonian University will run six research groups: Cognitive group, Physics-group, Machine-learning group, Neuro-group, BioDataScience-group, InfoTech-group. **We seek for researcher assistant in Cognitive group** The broad aim of the group would be to acquire the resting state fMRI, neurological, psychological, and behavioral data of 150 patients diagnosed with multiple sclerosis (MS) and 50 healthy controls during two sessions in regard to their psychophysiological state. As a result, data from 400 individual scans of patients in various stages of MS disease will be collected. In particular, the goal is to prepare the data for the further stage of analyzes carried out by other groups acting within project as well as conducting own analyzes allowing to determine the typology of changes in the restructuring of neural networks in patients and healthy subjects during the process of learning. Moreover, the relationship between mental exhaustion and resting state brain activity in MS patients and healthy subjects will be estimated. Additional goal would be to evaluate dynamic network reorganization during performing a task with the use of electroencephalography.
Key responsibilities include:	1. Planning and conducting fMRI experimental work with close cooperation with interdisciplinary team. 2. Interaction with neurological patients. 3. Resting state fMRI data preprocessing and analysis. 4. Operating Siemens Skyra 3 Tesla MRI system. 5. Preparation of data in order to create bio-inspired neural networks. 6. Manuscript preparation. 7. Presentation of scientific data on international conferences.
Profile of candidates/requirements:	1. Research record with a list of publications, conducted rsfMRI/fMRI analyzes, research projects, presentation titles from conferences; (relevance for the call). 2. Practical experience and knowledge in rsfMRI/fMRI

	analysis techniques such as: a/ functional connectivity and graph theory or b/ nonlinear method or c/ temporal dynamics, ALFF, fALFF, ReHo. 3.. Experience in operating the Siemens Skyra 3 Tesla system with completed Health and Safety training. 4. Experience in programming in Matlab environment. 5. Experience in work with patients with neurological and psychiatric diseases. 6. Fluency in both written and spoken English and Polish is a must. 7. Ability to work independently as well as in the team of people with various scientific fields. 8. PhD student in psychology with MSc degree in Neurobiology and master thesis topic related to fMRI is highly desirable (copy of MSc diploma and a candidate must have a PhD student status during the contract).
Required documents:	1. Application 2. Curriculum vitae. 3. Documents proving experience and background (points from 1 to 8 in the profile of candidate). 4. Opinion from current scientific supervisor. 5. Statement of knowledge and acceptance of intellectual property rules and legal protection. 6. Information about processing of personal data. 7. Personal questionnaire. The recruitment committee reserves the right to conduct an interview with selected candidates.
We offer:	1. Full time employment from 1 October 2019 till 30 September 2022 (36 months), subject to periodical evaluation. 2. Scientific and organizational support. 3. Work in an interdisciplinary research team.
Please submit the documents to:	wziks.projekty@uj.edu.pl
Application deadline:	30 August 2019 (12 PM CEST)

General rules of the requirement process	1. Candidates can apply at the same time for all positions offered by the project. It must be reported on the application form. 2. The decision will be taken by the Recruitment Committee established at the Faculty of Management and Social Communication at the Jagiellonian University. 3. The Recruitment Committee reserves the right to invite selected candidates for the interview. 4. The recruitment interview can be carried out during the first week of September 2019. Confirmation will be sent to potential candidates shortly after August 30. 5. The Recruitment Committee reserves the right to close the contest without selecting a candidate. 6. The results of the competition will be announced until 9/09/2019.
For more details about the position please visit	bionn.matinf.uj.edu.pl
Euraxess job/stipend offer (in case of PhD and postdoc positions):	https://euraxess.ec.europa.eu/jobs/432741

Due to the entry into force of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016, we also require that by applying, a candidate expresses his/her consent to the processing of his/her personal data needed for the recruitment process by the Jagiellonian University.