JOB OFFER

Position in the project:	PhD Student_1
Scientific discipline:	**Psychological sciences/ Neurosciences**
Job type (employment contract/stipend):	Scholarship
Number of job offers:	**1**
Remuneration:	3 800 PLN monthly (+ 3 800 PLN monthly to spent on internships, trainings and workshops)
Position starts on:	**1 March 2020**
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 show a 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 (leader Tadeusz Marek), Physics-group (leader Maciej A. Nowak), Machine-learning group, Neuro-group, BioDataScience-group, InfoTech-group.

We seek for PhD student (scholarship) 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 acquisition, processing and analysis 4. Operating Siemens Skyra 3 Tesla MRI system 5. Manuscript preparation 6. Presentation of scientific data on international conferences
Profile of candidates/requirements:	1. Research record with a list of publications, list of done rsfMRI/fMRI analysis, list of research projects, and list of presentation from conferences (relevance for the call, impact, role of applicant) 2. Practical experience and knowledge in resting state fMRI analysis techniques such as: a/ functional connectivity and graph theory or b/ nonlinear method or c/ temporal dynamics, ALF, fALF, ReHo is highly desirable 3. Participation in rsfMRI study/ research projects will be an asset. 4. Experience in operating the Siemens Skyra 3.0 Tesla system with completed Health and Safety training. 5. Experience in programming in Matlab environment will be considered advantageous. 6. Ability to work with patients with neurological and psychiatric diseases would be highly welcome. 7. Fluency in both written and spoken English and Polish is a must. 8. Ability to work independently as well as in the team of people with various scientific fields. 9. A candidate for a PhD student scholarship with MA degree in Psychology. MA from rsfMRI topic is highly desirable. (copy of MA diploma, 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 9 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. Scholarship from 1 March 2020 till 30 January 2023 (35 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:	13 January 2020
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 between 20 and 22 of January 2020. 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 23/01/2020.
For more details about the position please visit	bionn.matinf.uj.edu.pl
Euraxess job/stipend offer (in case of PhD and postdoc positions):	PhD Student (EURAXESS Job Offer id: 472287)