JOB OFFER

Position in the project:	Student
Scientific discipline:	Computer science/Mathematics/Physics/Other
Job type (employment contract/stipend):	Scholarship
Number of job offers:	2
Remuneration:	1 500 PLN monthly (scholarship)
Position starts on:	1 April 2023
Maximum period of contract/stipend agreement:	6 months (until 30/09/2023)
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 networks were inspired by the neural systems, using simplified neuron models and aspects of neural connectivity. Due to the increasing complexity of tasks and problems with the development of effective methods for learning in 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 main aim of the bioNN 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 runs six research groups: Cognitive group, Physics-group, Machine-learning group, Neuro-group, BioDataScience-group, InfoTech-group. **Within this call we seek two MSc students to join the Neuro group (https://neuroinflab.wordpress.com/).** Accepted students will work in one of the subprojects related to source localization in the brain using FEM, reinforcement learning based analysis and modeling of mice behavior in intelligent cages, or in one of the machine learning projects.

Key responsibilities include:	The responsibility of the potential contractor shall be: 1. designing, implementing, testing, maintaining, and documenting software created for the project and used as part of the project, 2. cooperation in the dissemination of project results, including assistance in the preparation of presentations and publications.
Profile of candidates/requirements:	Required 1. At the time of commencement of receiving the scholarship, the selected person is an MSc student of science (preferred physics, computer science, mathematics, or related fields), 2. fluency in Python 3. good knowledge of English Preferred (some or all) 1. Basic knowledge of neuroscience, computational neuroscience, artificial intelligence or machine learning, 2. Good command of applied mathematics (ODEs, PDEs, probability, numerical solutions) 3. experience with machine learning software libraries (TensorFlow, PyTorch, Keras or similar). 4. experience with finite element modeling 5. experience in research work,
Required documents:	1. filled in recruitment form (basic formal information); 2. curriculum vitae; 3. list of publications and experience in research projects; 4. statement on the knowledge and acceptance of rules regarding intellectual property and legal protection of intellectual property; 5. documents confirming the status of the Student (will be required when signing the contract); 6. consent to processing of personal data. See bionn.matinf.uj.edu.pl in the "Job offers" section for details. 7. Solution to one or more tasks provided here https://neuroinflab.wordpress.com/tasks/ or a link to candidate's github page documenting equivalent competence.
We offer:	1. cooperation with the best neuroinformatics and machine learning groups in Poland; 2. scholarship in the amount of PLN 1500; 3. access to computing infrastructure.
Please submit the documents to:	bionn@matinf.uj.edu.pl
Application deadline:	15 March 2023 (12 PM CEST)
General rules of the requirement process	1. An interview is expected. The Recruitment Committee (RC) reserves the right to invite for the interview only pre-selected candidates. We expect that the interview will be held on 20 March 2023. The invitation will be sent to the prospective candidates on the 17th of March.

	2. The decision will be taken by RC established at the Faculty of Mathematics and Computer Science of Jagiellonian University on 24th March 2023. 3. The final decision must be approved by Foundation for Polish Science. 4. RC reserves the right to close the competition without selecting a candidate. 5. In case of resignation of a candidate recommended for the position of a Student, or failure to receive the Foundation for Polish Science's approval, RC may announce a new call for the position. 6. The results of the recruitment procedure may be appealed by the interviewed candidates within the period of one week after obtaining information about RC decision.
For more details about the position please visit	bionn.matinf.uj.edu.pl
Euraxess job/stipend offer (in case of PhD and postdoc positions):	not applicable

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.