

## JOB OFFER

Position in the project:	Research Junior
Scientific discipline:	Computer science/Physics
Job type (employment contract/stipend):	Employment contract
Number of job offers:	1
Remuneration:	≈ 8 000 PLN monthly (gross income) doctoral degree obtained up to 5 years from the date of employment in project, full-time (gross income together with the employer's costs for full-time equals 10 000 PLN)
Position starts on:	Not later than 1 <sup>st</sup> October 2021
Maximum period of contract/stipend agreement:	26 months
Institution:	Jagiellonian University, Cracow
Project leader:	Jacek Tabor
Project title:	<b>Bio-inspired artificial neural networks</b> <b><i>Project is carried out within the TEAM-NET programme of the Foundation for Polish Science</i></b>
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

	<p>learning and new architectures of computational models.</p> <p>The Jagiellonian University will run six research groups: Cognitive group (leader Tadeusz Marek), Physics-group (leader Maciej A. Nowak), Machine-learning group (leader Igor Podolak), Neuro-group (leader Daniel Wójcik), BioDataScience-group (leader Paweł Oświęcimka), InfoTech-group (leader Tomasz Trzciniński).</p> <p><b>We seek for a Research Junior of the BioDataScience group.</b></p>
Key responsibilities include:	<p>The responsibility of the potential contractor shall be:</p> <ol style="list-style-type: none"> <li>1. analysis of large sets of neuronal data,</li> <li>2. numerical cross-check of the models of correlations,</li> <li>3. development of the algorithm of time series analysis,</li> <li>4. suggestions of mathematical and computer models and architectures of neural networks based on the results of above analysis.</li> </ol>
Profile of candidates/requirements:	<p>We are looking for a motivated candidate with PhD in computer science and/or physics.</p> <ol style="list-style-type: none"> <li>1. PhD degree;</li> <li>2. practical experience in time series analysis;</li> <li>3. publications at leading scientific journals;</li> <li>4. programming experience or knowledge of Matlab and Python;</li> <li>5. knowledge of neural networks;</li> <li>6. a good command of English (both in writing and speaking);</li> <li>7. full engagement in the project.</li> </ol>
Required documents:	<ol style="list-style-type: none"> <li>1. filled in recruitment form (basic formal information);</li> <li>2. curriculum vitae;</li> <li>3. list of publications and ongoing research projects;</li> <li>4. statement on the knowledge and acceptance of rules regarding intellectual property and legal protection of intellectual property;</li> <li>5. information about processing of personal data;</li> <li>6. document confirming the scientific degree ( copy of the PhD diploma).</li> </ol>
We offer:	<ol style="list-style-type: none"> <li>1. cooperation with the best machine learning groups, complexity groups and neuroscience groups in Poland;</li> <li>2. competitive earnings (about PLN 8,000 gross);</li> <li>3. possibility to cover the costs of participation in conferences and workshops;</li> <li>4. access to computing infrastructure;</li> <li>5. raising qualifications;</li> </ol>
Please submit the documents to:	<p><a href="mailto:bionn@matinf.uj.edu.pl">bionn@matinf.uj.edu.pl</a></p>
Application deadline:	<p>31<sup>st</sup> July 2021 (12 PM CEST)</p>
General rules of the recruitment process	<ol style="list-style-type: none"> <li>1. Candidates may run simultaneously for all positions offered by the project. This must be declared in the application form.</li> <li>2. The decision will be taken by the Recruitment Committee (RC) established at the The Faculty of Physics, Astronomy</li> </ol>

	<p>and Applied Computer Science of the Jagiellonian University to 25<sup>th</sup> August 2021. The final decision must be approved by Foundation for Polish Science.</p> <p>3. An interview is expected. RC reserves the right to invite for the interview only pre-selected candidates. We expect that the interview will be held on 16 - 20 August 2021. The confirmation will be sent to the prospect candidates on 9 - 11 August 2021.</p> <p>4. RC reserves the right to close the competition without selecting the candidate.</p> <p>5. In the case of the resignation of a candidate recommended for the position of a Research Junior, or failure to receive the Foundation for Polish Science's approval, RC will be evaluate the candidates, or may ask to publish a new call for the position.</p> <p>6. The results of the recruitment procedure may be appealed by the candidates within the period of one week after obtaining information about the decision RC.</p>
<p>For more details about the position please visit</p>	<p><a href="http://bionn.matinf.uj.edu.pl">bionn.matinf.uj.edu.pl</a></p>
<p>Euraxess job/stipend offer:</p>	<p>Junior Postdoc (EURAXESS Job Offer id: 658717)</p>

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.