

## Research Associate in *Artificial Intelligence* *Evolution of lifelong learning machines*

Job Ref: REQ180509

**As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.**

Applications are invited for a Research Associate position in the Department of Computer Science, School of Science, as part of an Artificial Intelligence international research project on Lifelong Learning Machines.

### Project Description

The Researcher will work on the evolution of neural systems for perception and control with bio-inspired principles such as unsupervised learning and neuromodulation. The researcher will join a large international research team, and will co-ordinate the research of two Ph.D. students.

### Job Description

**Job Grade:** Specialist and Supporting Academic, Grade 6

#### Job Purpose

This post is intended to provide high level technical and scientific leadership to a new research project on lifelong learning machines externally funded. More specifically, the RA will aim to:

- Develop advanced models of evolutionary lifelong learning systems.
- Understand research challenges, deployment scenarios, and algorithmic features for the advancement of the field of lifelong learning machines.
- Lead to the successful realisation of the work-plan outlined in the description of work.

#### Job Duties

- To become familiar with the area of lifelong learning machines, and the concepts of evolved neural plasticity, neuromodulation, perception and control.
- To closely interact with, and help with the supervision of, the two Ph.D. students on the project.
- To ensure that the research is focussed on the deliverables of the project.
- To ensure that deliverables are prepared according to the workplan and on time.
- To propose a publication agenda and execution plan while helping identify technical novelty and feasibility in the activity of the research group with the aim to target high impact journal and conference publications.
- Be responsible for conducting the day to day running of the project.
- To formulate detailed plans for the project based on broad guidance from the project team.
- To feed back to the project team on progress, to make recommendations for next steps.
- Write up regular progress reports and present outcomes to all Investigators and Collaborators.
- Travel to attend meetings and make presentations both within the project partners working group and to external stakeholders.
- To support the project team by enhancing relationships with existing collaborators and by assisting the establishment of relationships with new collaborators.
- To contribute to project promotion and public engagement events.
- Contribute ideas for new research and enterprise directions.

- Maintain confidentiality at all times and ensure that intellectual property (IPR) agreements are not violated.
- To assist the academic staff in the project team with the supervision of undergraduate MSc and PhD project work and day-to-day supervision and support of other researchers.
- Where appropriate, to deliver teaching, tutorial and laboratory sessions to students.
- Engage in training programmes in the University (or elsewhere) that are consistent with the needs and aspirations of the project and those of the Department.
- Undertake other duties as may be reasonably requested and that are commensurate with the nature and grade of the post.

### **Points to Note**

The purpose of this job description is to indicate the general level of duties and responsibility of the post. The detailed duties may vary from time to time without changing the general character or level of responsibility entailed.

### **Special Conditions**

All staff have a statutory responsibility to take reasonable care of themselves, others and the environment and to prevent harm by their acts or omissions. All staff are therefore required to adhere to the University's Health, Safety and Environmental Policy & Procedures.

All staff should hold a duty and commitment to observing the University's Equality & Diversity policy and procedures at all times. Duties must be carried out in accordance with relevant Equality & Diversity legislation and University policies/procedures.

Successful completion of probation will be dependent on attendance at the University's mandatory courses which include Respecting Diversity and, where appropriate, Recruitment and Selection.

### **Organisational Responsibility**

Reports to the principal investigator of the project, Dr. Andrea Soltoggio

## Person Specification

Your application will be reviewed with respect to meeting the essential and desirable criteria listed below. Your application will be reviewed against the essential and desirable criteria listed below. Applicants are strongly advised to explicitly state and evidence how they meet each of the essential (and desirable) criteria in their application. Stages of assessment are as follows:

- 1 – Application
- 2 – Test/Assessment Centre/Presentation
- 3 – Interview

### Essential Criteria

Area	Criteria	Stage
<b>Experience</b>	Background in neural learning systems.	1 and 3
	Experience in deploying algorithms to HPC clusters.	1 and 3
	Experience in developing new state-of-the-art deep learning systems.	1 and 3
	Experience of programming using Python, Matlab, C/C++, C#	1 and 3
	Authoring original work for academic journal papers, conference papers or technical reports.	1 and 3
	Experience in running algorithms on GPUs.	1 and 3
	Experience in developing industrial or commercial applications.	1 and 3
	<b>Skills and Abilities</b>	Excellent publication records in computer vision or pattern recognition journals.
Excellent written communication skills, ability to produce professional reports.		1 and 3
Self-motivated with ability to meet deadlines.		1 and 3
Excellent interpersonal, and organisational skills.		1 and 3
Working knowledge of software packages such as Keras, Caffe.		1 and 3
Working knowledge of specific analytical, numerical methods for general machine learning (regression, classification, optimisation, gradient descent, etc).		1 and 3
<b>Training</b>	Demonstrate evidence of having undertaken further training.	1 and 3
<b>Qualifications</b>	PhD.	1
<b>Other</b>	Commitment to observing the University's Equal Opportunities policy at all times.	3

### Desirable Criteria

Area	Criteria	Stage
<b>Experience</b>	Developing proposals for funding from external agencies.	1 and 3
	Working in a high quality academic research environment.	1 and 3
	Experience of teaching and / or supervision of students in machine learning.	1 and 3
<b>Skills and Abilities</b>	Authoring original work, in the highest quality refereed academic journals.	1
	A strong publication track record.	1
<b>Qualifications</b>	PhD in Computer Science.	1
<b>Other</b>	Travel / Able to travel Independently / Flexible working patterns.	3

## Conditions of Service

The position is full-time and fixed-term until June 2020. Salary will be on Specialist and Supporting Academic Grade 6, (£29,799 - £38,833 per annum), at a starting salary to be confirmed on offer of appointment.

The appointment will be subject to the University's normal Terms and Conditions of Employment Grade 6 and above staff, details of which can be found [here](#).

The University is committed to enabling staff to maintain a healthy work-home balance and has a number of family-friendly policies which are available at <http://www.lboro.ac.uk/services/hr/a-z/family-leave-policy-and-procedure---page.html>.

We also offer an on-campus nursery with subsidised places, subsidised places at local holiday clubs and a childcare voucher scheme (further details are available at: <http://www.lboro.ac.uk/services/hr/a-z/childcare-information---page.html>)

In addition, the University is supportive, wherever possible, of flexible working arrangements. We also strive to create a culture that supports equality and celebrates diversity throughout the campus. The University holds a Bronze Athena SWAN award which recognises the importance of support for women at all stages of their academic career. For further information on Athena SWAN see <http://www.lboro.ac.uk/services/hr/athena-swan/>

## Informal Enquiries

Informal enquiries should be made to Andrea Soltoggio email at [a.soltoggio@lboro.ac.uk](mailto:a.soltoggio@lboro.ac.uk) or by telephone 01509 635748.

## Applications

The closing date for receipt of applications is **31 August 2018**.