UNIVERSITY OF SUSSEX

1 Advertisement

Post Title: Research Fellow in Computational Neuroscience and Bio-Inspired Artificial Intelligence
School/department: School of Life Sciences
Hours: Full-time. Part time hours considered.
Requests for flexible working options will be considered (subject to business need).
Location: Brighton, United Kingdom
Contract: 17 months in the first instance
Reference: 10735
Salary: starting at £35,333 to £42,155 per annum, pro rata if part time
Placed on: 14 February 2023
Closing date: 09 March 2023. Applications must be received by midnight of the closing date.
Expected Interview date: to be confirmed
Expected start date: Mid March or early April 2023

We are looking for a post-doctoral research fellow to join our team working on bio-inspired AI and computational modelling of insect behaviour and learning. You will join a BBSRC funded project called “Emergent embodied cognition in shallow neural networks”.

Your primary role will be to develop simulations of learning problems that insects face such as flower learning or navigation. Insect learning occurs rapidly within shallow neural networks. This is possible because learning is an active process emerging from the interaction of evolved brains, sensory systems and behaviours. We will explore how behavioural strategies and specialised sensors interact with learning success.

You will work under the supervision of Prof Paul Graham (School of Life Sciences) and Professors Andrew Philippides and Thomas Nowotny (Department of Informatics). You will join an active team of research fellows and PhD students working on similar topics.

Please contact Prof Paul Graham, p.r.graham@sussex.ac.uk, for informal enquiries.

The University is committed to equality and valuing diversity, and applications are particularly welcomed from women and black and minority ethnic candidates, who are under-represented in academic posts in Science, Technology, Engineering, Medicine and Mathematics (STEMM) at Sussex.

“*Please note that this position may be subject to ATAS clearance if you require visa sponsorship.*”

For full details and how to apply see our vacancies page

The University of Sussex values the diversity of its staff and students and we welcome applicants from all backgrounds.

Please note: The University requires that work undertaken for the University is performed from the UK.

2. The School / Division

Please find further information regarding the relevant departments
http://www.sussex.ac.uk/lifesci/ and https://www.sussex.ac.uk/informatics/

3. Job Description

Job Description for the post of: **Research Fellow in Computational Neuroscience and Bio-Inspired Artificial Intelligence**

Department: EBE/Informatics

Section/Unit/School:LifeSciences/EngInf

Location: JMS Building, Falmer Campus

Grade: 7

Responsible to: Prof Paul Graham through to Head of School

Research Fellow I is an early career-grade research position. Post-holders will be expected to contribute to the work of the research team, and also to develop their research skills with support from more experienced members of staff.

4. Person Specification

KEY RESPONSIBILITIES

1. Research, Scholarship & Enterprise

1.1 Develop research objectives and proposals for own or joint research, at acceptable levels, with assistance if required.
1.2 Conduct research projects individually and in collaboration with others.
1.3 Analyse and interpret research findings and draw conclusions on the outcomes.
1.4 Produce high-quality research outputs for publication in monographs or recognised high-quality journals as appropriate, and contribute to the School's REF submission at acceptable levels of volume and academic excellence.
1.5 Contribute to the preparation of proposals and applications to external bodies for future funding purposes.
1.6 Build internal contacts and participate in internal networks and relevant external networks in order to form relationships and collaborations.
1.7 Continually update knowledge and understanding in field or specialism and engage in continuous professional development.

2. Teaching & Student Support

2.1 Undertake teaching duties, if required.
2.2 Assist in the assessment of student knowledge and supervision of student projects if required.
2.3 Assist in the development of student research skills, for example as part of a postgraduate supervision team.

3. Contribution to School & University

3.1 Attend and contribute to relevant School and project meetings.

3.2 Undertake additional duties, as required by the Principal Investigator and/or Head of School.

4. Role-specific duties

4.1 Formulate, implement and test computational models of insect visual learning
4.2 Build 3D models of natural environments to explore contribution of insect sensory systems to visual learning.
4.3 Distil insights from insect neuroscience to the architecture of computational learning systems.
4.4 Participate actively in project meetings with collaborators both online and in-person as required.
4.5 Present results at leading international conferences and publish in leading international journals.
4.6 Contribute to the public dissemination of project progress by contributing to web presence, social media and other forms of public engagement.

This Job Description sets out current duties of the post that may vary from time to time without changing the general character of the post or level of responsibility entailed.

INDICATIVE PERFORMANCE CRITERIA

- A PhD or equivalent scholarly or relevant professional activity
- Pursuing a line of independent research within a research group.
- Publishing research (either from a recently completed PhD or new original research).
- Other forms of externally recognised professional practice of creative output of a standing equivalent to regular publication of original research.
- Initiating, developing or participating in links between the University and external bodies such as business and industry, the professions, community organisations and policy-makers.
- Evidence of successful engagement in teaching or supervision.

PERSON SPECIFICATION – ESSENTIAL CRITERIA

1. Normally educated to doctoral level, or other equivalent qualification, or appropriate level of experience, as appropriate to the discipline (see role-specific criteria below).
2. Evidence of engagement in high-quality research activity.
3. Excellent presentation skills, with the ability to communicate effectively, both orally and in writing, with students, colleagues and external audiences.
4. Ability to work individually on own initiative and without close supervision, and as part of a team.
5. Ability to exercise a degree of innovation and creative problem-solving.
6. Excellent organisational and administrative skills.
7. Ability to prioritise and meet deadlines.
8. Excellent IT skills.

ESSENTIAL ROLE-SPECIFIC CRITERIA

1. Strong background in robot navigation, machine learning, computational neuroscience, bio-inspired AI, or a relevant area
2. Strong technical and analytical skills with expert level programming in a relevant programming language, e.g. Python, C++
3. Familiarity with modern machine learning methods or neural simulations or biological modelling
4. Interest in biological intelligence and learning
5. Ability to collaborate openly and to work in multi-disciplinary research teams
6. Experience of preparing and publishing scientific articles in high impact journals

DESIRABLE CRITERIA

1. Emerging track record of high-quality publications in reputable journals and other appropriate media of similar standing
2. Experience of generating research or knowledge exchange income.
3. Experience of computer vision/image processing
4. Experience with the GeNN framework or GPU computing
5. Knowledge of neuroscience, especially relating to insect neuroscience and/or learning
6. Experience of animal behavioural experiments
7. Good software engineering skills