Job Description

Job title	Turing Research Associate AI for Neurotechnology
Department/School	Bath Institute for the Augmented Human, Department of Computer Science
Job family	Education and Research
Grade	7
Reporting to	Principal Investigator (PI) or Co-Investigator (CI)
Responsible for	There may be a requirement for: day to day supervision of other staff e.g. technical staff or, co-supervision of doctoral or undergraduate students
Location	University of Bath premises

Background and context

The UKRI Turing AI Acceleration Fellowship Project and neurotechnology research at Bath led by Prof Damien Coyle aims to develop new AI approaches to address challenges associated with translating electrophysiological signals into control signals for brain-computer interface (BCI) based neurotechnology and to trial these developments on a large scale with end-users.

This project offers an exciting opportunity for a researcher with experience in neural signal processing and AI/machine learning for analysis, classification and decoding of high-resolution electroencephalography (EEG).

Working alongside Prof Damien Coyle and the team associated with the Turing AI Fellowship at the Bath Institute for the Augmented Human, the Research Associate will develop leading AI solutions including deep learning (convolutional neural networks, log-term short terms memory, capsule network technologies, attention and transformer-based algorithms, foundational models, reinforcement learning and multi-objective coevolutionary optimisation approaches) to address some of the major challenges associated with creating robust wearable neurotechnology.

The post-holder will contribute to planning of research experiments involving human participants, managing and analysing data, developing software and technologies for experiments and prototyping real-time AI solutions, and will be expected to publish the results of the research in high impact journal publications.

The post-holder will work with AI experts, engineers, neuroscientists, psychologists, trials managers and neuroimaging experts.

The post holder will be required to support a range of research projects and contribute to the overall success of the team.

Experience of AI research, developing and applying technologies including deep-learning using platforms such as Keras, Pytorch or Tensor Flow and/or experience of optimising the performance of software for high performance computing on CPU and GPU clusters and experience in VR/AR/games development for applications such as brain-computer interfacing are requirements for this role.

The post may involve travel, extended stays away from campus, arranging travel and management of travel expenses and may involve access to own transport.

Job purpose

To provide subject-specific research expertise and undertake specific research work to a Principal Investigator (PI)/Co-Investigator (CI) and their research team for a specified grant/project.

Main duties and responsibilities

	Responsible to the PI/CI for (as appropriate to discipline):
1	Conduct individual and/or collaborative research projects. Contribute to the design and execution of the project e.g. timetabling and meeting project milestones; participating in regular discussions with collaborative partners. Generate, collect and analyse existing data related to the project using qualitative and/or quantitative techniques.
2	Write-up results of research and contribute to the publication of results in high-quality peer-reviewed academic literature.
3	Disseminate results of research project as appropriate to the discipline through activities such as • overseas research visits • conference presentations • public engagement activities
4	Participate in departmental/group meetings and prepare and deliver presentations/seminars to project team, internal and external stakeholders or funders.
5	Assist with the supervision of postgraduate students and undergraduate project students and the assessment of student knowledge.

6	Continually update knowledge and understanding in field or specialism to inform research activity.
7	Identify sources of funding and provide assistance with preparing bids to funding bodies. Develop ability to secure own funding e.g. travel grants.
8	Contribute to the development of research objectives and proposals for own or joint research projects, with assistance of a mentor, if required.
9	Disseminate knowledge of research advances to inform departmental teaching.
10	As a member of Research Staff at the University, you will be encouraged to take up a minimum of 10 days' professional development pro rata per year. You should use this time to spend on activities that will benefit your career development and your personal growth. Examples include: attending workshops, career development coaching, mentoring, training courses, participation in networks, attending conferences, writing fellowship or funding applications, and representing the research staff community on committees or working groups. The University, as a signatory to the Concordat for the Career Development of Researchers, is committed to its principles. We aim to provide a supportive and inclusive environment, where researchers' contributions are recognised and valued, and we provide opportunities to enable research staff to develop their full potential.
	You will from time to time be required to undertake other duties of a similar nature as reasonably required by your line manager. You are required to follow all University policies and procedures at all times and take account of University guidance.

Person Specification

Criteria	Essential	Desirable
Qualifications		

Undergraduate degree (e.g. BA, BSc, BEng)	√	
PhD degree* in subject area of direct relevance for the project; **or**	√	
Professional/Industrial/Creative Doctorate in subject area of direct relevance for the project (e.g. DBA, MD, EdD, PsyD, EngD, DA); **or**		
Professional qualification (e.g. Chartership) and relevant experience equivalent to that of a PhD; **or**		
Professional experience in relevant discipline equivalent to that of a PhD		
Experience/Knowledge		
Post doctoral experience		√
Demonstrated significant depth and breadth of specialist knowledge of subject matter to contribute to research programmes and to the development of departmental research activities	√	
Demonstrated awareness of latest developments in the field of research and in research design	√	
Demonstrated potential to publish in high quality, peer reviewed journals	√	
Skills		
Ability to prepare research proposals, to conduct individual research work and to disseminate results		√
Ability to organise and prioritise own workload to meet required deadlines	√	
Ability to write research reports and to effectively disseminate outcomes	√	
Excellent oral, interpersonal and written communication skills	√	
Proficiency in appropriate techniques (as appropriate to discipline)	√	
Proficiency in IT skills (as appropriate to discipline)	√	
Attributes		
Commitment to working within professional and ethical codes of conduct	√	
Innovation and developing creative solutions	√	

Commitment to excellence in research	√	
Enthusiasm and self-motivation	√	
Tenacity – working to achieve own and team objectives and to overcome obstacles	√	
Ability to be an effective team worker	√	
Commitment to safe working practices	√	

*If you have not yet been awarded your PhD, you will need to have at least submitted your thesis in order to be offered this role (if successful). This offer would be subject to you passing your viva with or without minor corrections and your PhD being awarded within your six-month probation period. Please note that an offer may be withdrawn, or probation failed, if a PhD viva is not passed or passed with major corrections. The University's normal probationary requirements apply in all other respects.