Wolfson School of Mechanical, Electrical and Manufacturing Engineering

Loughborough University

Research Associate in Biomechanical Engineering

Job Ref: REQ250081

As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.

Project Description

Applications are invited for a Research Associate position in the Sports Technology Research Group, Wolfson School of Mechanical, Electrical and Manufacturing Engineering, Loughborough University. The research group has an outstanding international reputation in sports engineering research, working with global brands on the design, simulation, testing and manufacture of sports goods (www.lboro.ac.uk/research/sti/). In particular, the group has built a world-leading track record in head and neck injury research. The group has access to extensive laboratory and industry facilities to support this research.

The purpose of this role is to lead the development of new mechanical test methods to assess the effectiveness of cycling helmets during body-first impacts. The project is funded by EPSRC and is collaborative in nature. The Research Associate will work with the teams at Loughborough University, Tokyo Institute of Technology, Lund University and industry partners. The Research Associate will also be directly involved in supporting multiple PhD, Masters and Undergraduate student projects in the same area.

Job Description

Job Grade: Specialist and Supporting Academic Grade 6

Job Purpose

The role presents the opportunity to make a real difference to the global understanding of traumatic brain injury risk and prevention due to cycling collisions. While based in the Sports Technology Institute at Loughborough University, the Research Associate will work closely with external academic and industry partners to ensure successful delivery of the project. There is a clear expectation to publish the outcomes in relevant journals. The expertise gained and networking opportunities, including visits to project partners and attendance at international conferences, are expected to position the Research Associate effectively for a future career in either industry or academia.

Job Duties

Research

- To identify and analyse real-world accident/collision data to understand the human kinematics of the impact.
- To evaluate current approaches used in the reconstruction of these impacts.
- To design and develop laboratory-based test rigs to match kinematic data from real-world accident data.
- To identify modifications that provide the best agreement with real-world collision data.
- To write and submit research papers suitable for publication in high quality academic journals.
- To support the development of research grant proposals.
- To attend meetings and make presentations both within the project partners working group and to external stakeholders.
- To plan, manage and conduct the work according to agreed deadlines.
- To always maintain confidentiality and ensure that intellectual property agreements are not violated.
- To work closely with the team of experienced academics who will contribute expertise in human impact engineering.

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Teaching

- Teaching is not the primary purpose of this post and teaching load will be small relative to the typical load of a member of academic staff in the School, but the Research Associate will be expected to contribute to taught programmes and student projects, at any level, if appropriate and if requested to do so.

Other Related Activities and Functions

- To engage in training programmes in the University (e.g. through Professional Development) and elsewhere as required.
- To undertake such 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 Equity, Diversity & Inclusion policy and procedures at all times. Duties must be carried out in accordance with relevant Equity, Diversity & Inclusion legislation and University policies/procedures.

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

Organisational Responsibility

Reports to the project supervisor, Dr Jon Farmer.

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Person Specification

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 – Interview

Essential Criteria

Area	Criteria	Stage
Experience	Background in engineering, science or mathematics.	1
	Experience in the design and development of mechanical impact test equipment.	1,2
	Experience in experimental testing with anthropomorphic test devices.	1,2
	Conducted original research that can be, or has been, published in high-quality journals.	1,2
	Experience of coding in Matlab or Python.	1,2
Skills and abilities	Demonstration of excellent technical ability.	1,2
	Ability to work accurately and precisely on specific engineering problems.	1,2
	Self-motivated and able to work without close supervision.	1,2
	Ability to work to deadlines.	1,2
	Excellent report writing and presentation skills.	1,2
	Good journal and/or conference publication record.	1,2
	Excellent interpersonal skills.	1,2
	Ability to maintain confidentiality at all times.	1,2
	Ability to work independently and as part of a team.	1,2
Training	A willingness to undertake further training as appropriate and to adopt new procedures as and when required.	2
Qualifications	Hold either a PhD in engineering or another relevant subject.	1,2
Other	Demonstration of a passion for sport and sports injuries.	1,2
	Demonstration of suitability for the specific position being advertised.	1
	Evidence of a good working knowledge of equal opportunities and understanding of diversity in the workplace.	2

Desirable Criteria

Area	Criteria	Stage
Experience	Mechanical design and development of impact test rigs.	1,2
	Designing and running experiments to capture ATD impact response.	1,2
Skills and abilities	Knowledge of the Loughborough University surrogate neck and head form.	1,2
	Experience of working with external collaborators.	1,2

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Qualifications	Hold a PhD in mechanical design including human factors.	1,2
	Willingness to travel within the UK and Europe for project meetings.	2

Conditions of Service

The position is FULL TIME and FIXED TERM for 36 months with position not extending beyond the project end date of 31 March 2028. Salary will be on Specialist and Supporting Academic Grade 6, Salary Band £34,866 – £42,632 per annum, at a starting salary to be confirmed on offer of appointment.

The appointment will be subject to the University's Terms and Conditions of Employment for STAFF GRADES 6 AND ABOVE, 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.

The University offers a wide range of employee benefits which can be found here.

In addition, the University is supportive, wherever possible, of flexible working arrangements.
We also strive to create a culture that supports Equity 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/

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