Wolfson School of Mechanical, Electrical, and Manufacturing Engineering

Loughborough University

Senior Research Associate in Software Development: User Interface, Visualisation and "dll" Libraries
Job Ref: REQ221206

As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.

There is a vacancy within the Dynamics and Tribology group, to develop GUI (Graphical User Interface), dll libraries and visualisation tools for our unique models. The project will build on years of expertise and will deliver unique tools for design and development engineers.

Loughborough University is renowned for the relevance of its research. Research undertaken at Loughborough helps business and industry to compete more effectively, shape public policy and ultimately improve the quality of people's lives. Loughborough has a research community made up of more than 2,200 staff and students and is well known for having a wide range of research partnerships with multi-national businesses and has long-standing collaborative links with many public and private sector organisations.

Dynamics and Tribology group is known for cutting-edge and high-impact research and enterprise activities in the field of tribology and dynamics. This project and the recruited RA will form an integral part of our activities which are helping to prepare industry and engineering community for a net-zero future.

Project Description

Tribology is the science of friction, wear and lubrication. Modelling these aspects in any mechanical system can specify the efficiency and durability of systems. Simulation of tribology helps engineering community to move towards more virtual engineering, and ultimately zero prototyping.

At Loughborough, we have unique set of scientific and industry-standard models, which is intended to take them to a practical level. This RA position is to enhance our team in our journey towards more practical and user-friendly tools for industrial application. He/she will develop GUIs, visualisation tools and dll libraries required for implementation. Applicants are welcome for either full-time or part-time roles.

The project is led by Dr Mahdi Mohammadpour.

Job Description

Job Grade: Specialist and Supporting Academic Grade 7

Job Purpose:

The Postdoctoral Senior Research Associate will work as part of a dedicated team to take results of background research to a higher TRL, ready for implementation in industry settings.

Job Duties
Research
- To develop GUIs.
- To develop visualisation tools (graphs, diagrams, table outputs, animations …)
- To develop dll libraries.
- To develop licencing system.

General, technical
- To perform risk assessments, develop method statements and implement safe working practices.
- To manage and maintain technical equipment and provide training to other users as required
- To actively engage with industrial and other non-academic stakeholders to determine system requirements and identify and address potential technological barriers for implementation
- To regularly report research progress to the management/supervisor through formal and informal reports and communications
- To write research papers suitable for publication in high quality academic journals and for presentation at specialist scientific conferences, all subject to confidentiality approval.
- To attend and contribute to project meetings and engagement events.
- To manage the general lab organization and coordination.
- To comply fully with confidentiality requirements set by the supervisor/manager.

General and administrative
- To work effectively with relevant administrative, technical and academic staff in the School and across the University.
- To engage in training programmes in the University (e.g. through Staff Development) which are consistent with the RA's ongoing professional development, and the needs and aspirations of the project team and those of the School.
- To maintain confidentiality at all times and ensure that intellectual property 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.
- To carry out specific other duties as may be reasonably requested by the project leaders 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 Dr Mahdi Mohammadpour, Wolfson School of Mechanical, Electrical, and Manufacturing Engineering.

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
Experience	Experience of developing GUI, dll libraries, visualisation tools and licencing systems.	1,3
	Clear understanding of confidentiality in the team and technical works	1,3
	Experience in the fields of software development	1,3
	At least 3 years of relevant experience in an academic research environment or equivalent industrial experience.	1,3
	Record of presenting project findings at all levels, adapted to specific audience needs, ranging from academic experts, industrial partners as well as general public	1,3
Skills and abilities	Ability to plan and manage project activities, prioritise and meet deadlines	1,3
	Ability to work independently and also as part of a team	1,3
	Willing to work across Schools and universities to maximize cross-disciplinary outputs	1,3
	Excellent written and oral communication skills	1,3
	Excellent interpersonal, and organisational skills	1,3
	Ability to network with other academics and engage with project stakeholders	1,3
	Ability to write project reports and make technical presentations to industrial and academic research groups	1,3
	Skills in finding information in the scientific literature and proposing original ideas	1,3
	Knowledge, awareness and practice of relevant Health & Safety issues	1,3
	Willingness to assist in preparation for meetings	1,3
Training	A willingness to undertake further training as appropriate and to adopt new procedures as and when required	1,3
Qualifications	Have a relevant degree or above.	1
Other	Commitment to observing the University's Equal Opportunities policy at all times.	1,3
	Commitment to maintain confidentiality, where relevant, at all times	1,3
	Willingness to travel and do medium-term visits to project partners	1,3

Desirable Criteria

Area	Criteria	Stage
Experience	Experience in supervising junior members	1,3
	Writing research proposals for funding from internal/external sources.	1,3
Skills and abilities	Willingness to work collaboratively with project partners in different locations	1,3

Conditions of Service

The position is FULL TIME or part time (applicant willing to work full-time or part-time are welcome to apply) and FIXED TERM (4 Months). Salary will be on Specialist and Supporting Academic Research, Grade 7 (spine 37), Salary Band £43,414 per annum. 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 can be found here.

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

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/