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HUMAN RESOURCES

JOB REF: ENVTR1014

UNIVERSITY OF LEEDS

Faculty of Environment

Institute for Transport Studies

ASSOCIATE PROFESSOR / CHAIR IN DRIVING SIMULATION

Responsible and reports to: Director of Institute

1. CONTEXT AND SUMMARY

- 1.1. The University of Leeds is seeking to appoint a research leader to continue the development of our programme of research based around the University of Leeds Driving Simulator (UoLDS) within the Safety and Technology Group in the Institute for Transport Studies.
- 1.2. Since it was commissioned in 2006, the UoLDS has become one of the prominent research facilities of its type. Unlike many other simulators, UoLDS was initially designed and continues to develop using in-house expertise. UoLDS builds on a legacy of driving simulation facilities at ITS, each constructed to support its transport safety research.
- 1.3. The person appointed will:
 - 1.3.1. attract the funding for and deliver top quality research projects and outputs that contribute to impact and innovation in driving simulation and driver behaviour/modelling;
 - 1.3.2. lead the University of Leeds Driving Simulator: developing an innovative strategy for its use and advancing the science and technology of this facility;
 - 1.3.3. deliver research-led teaching that contributes to an exceptional student experience.

- 1.4 There is an immediate requirement for the person appointed to lead one of UoLDS's ongoing, high-impact, research projects: the Programme for Simulation Innovation (PSI). PSI is a five year strategic collaboration, funded by EPSRC and Jaguar Land Rover (JLR), to develop capabilities in advanced simulation to support the vehicle design process, thereby reducing the reliance on physical prototypes.

As Principal Investigator and Project Manager the appointee will lead the University's involvement in PSI under Theme 3 (Driving Simulation). This will involve close liaison with both academic and JLR colleagues working on the project to ensure its impact is significant both at an academic and industrial level. Academically, this will be in the development of novel techniques to evaluate driving simulator validity objectively with a justifiable use of driver models. Industrially, this will be to define design guidelines and practical solutions aimed at improving JLR's capability in "virtual vehicle prototyping", via use of such driver models as well as pragmatic use of driving simulation.

2. ASSOCIATE PROFESSOR: MAIN DUTIES AND RESPONSIBILITIES

2.1 RESEARCH, INNOVATION AND IMPACT

- Be recognised as an authority in the field of driving simulation, developing and maintaining an external profile.
- Pursue, develop and lead high quality research, innovation and impact.
- Develop the strategic direction within own research area and for the University of Leeds Driving Simulator.
- Promote the integration of own research area with other research interests within and, as appropriate, outside ITS and the faculty.
- Maintain a high quality record of regular and original research publications of international quality.
- Attract research income on an individual and collaborative basis to underpin high quality research activity including through the proactive engagement with industry.
- Provide high quality postgraduate supervision and attract research students to the university.
- Take part in knowledge transfer activities.

2.2 TEACHING

- Undertake research-led teaching on postgraduate taught courses.
- Contribute at an appropriate level to ITS and faculty policy and practice in teaching.
- Develop innovative approaches to learning and teaching as appropriate.
- Provide timely feedback and assessment of coursework and examinations where relevant.
- Act as principal supervisor of postgraduate research students, providing guidance, support and resolving issues as appropriate.

2.3 **ACADEMIC LEADERSHIP**

- Significant contribution to the overall work of the University and/or equivalent external organisations by representing ITS and the faculty on appropriate committees and groups. In particular, take the role of Facility Director of UoLDS, leading the simulator's utilisation for research into the human factors of driving, intelligent transport systems and vehicle design. This will require shaping the ongoing development of the UoLDS, alongside defining a clear research strategy for the simulator complimentary to the wider S&T Research Group, in addition to leading and developing the simulator team.
- To maintain a safe and healthy work environment, including responsibility for health and safety of the UoLDS facility and its users, ensuring compliance with health and safety legislation and the undertaking of appropriate risk assessments.
- Effective contribution to the management and administrative processes and committee structures of ITS, the faculty and university.
- Manage or lead major initiatives or areas of work (as either sustained or one-off projects) which facilitate ITS, faculty or university performance or business as required.
- Involvement in the recruitment, management and development of staff and act as a mentor to more junior/less experienced colleagues.
- The promotion of the values of collegiality within the academic community.
- Actively promoting and engaging with the objectives of our valuing and developing all our staff agenda via compliance with the University's People Management Framework to ensure high standards of employment practices across ITS.

2.4 **GENERAL**

- To contribute to the development and achievement of university, faculty and ITS strategy within the context of an international, research-led university.
- Adhere to University values and standards, including the Leadership and Management Standard, and in line with university policies and procedures and local faculty/ITS benchmarks as appropriate, upholding high professional standards and leading by example.
- To be aware of and work in line with the University's learning and teaching partnership agreement and work with our students as members of a learning community to provide world class education and an excellent student experience.
- To maintain own continuing professional development.
- To integrate the University value of inclusiveness into all appropriate aspects of the job; respecting the dignity and diversity of all members of the University community and of visitors to the University.

This job description provides a framework for the role and it may be necessary to undertake other duties commensurate with the post as might reasonably be required.

3. CHAIR: MAIN POSTHOLDER RESPONSIBILITIES

- Undertake internationally leading research and inspirational teaching, taking a leadership role in translating excellence in research and scholarship into learning opportunities for students.
- Promote the disciplines of driving simulation nationally and internationally, winning prestige for both the disciplines and the University.
- Take a leading role in shaping the agenda for driving simulation research and in further advancing the strategic development of the University of Leeds Driving Simulator.
- Provide a major contribution to the strategic academic development, direction and leadership of ITS, the Faculty and University.
- Promote and help to deliver excellence in research and student education for ITS and the highest standards of student experience.
- Support and mentor less experienced academic and research staff to promote career development and the nurturing of academic talent.

3.1 RESEARCH, INNOVATION & IMPACT

- Develop and lead excellent research, innovation and impact at national and international levels.
- Establish and maintain a high quality record of research output in leading internationally-recognised publications.
- Achieve sustained high levels of research funding individually and/or in collaboration with others and develop and maintain networks and promote links with Research Councils, industry and other external organisations.
- Provide academic leadership and guidance to colleagues working within own research area and more widely across ITS, the Faculty and University, building research teams and promoting the development of a vibrant and sustainable research culture, community and environment in ITS.
- Attract high quality postgraduate research students to the University and provide them with excellent supervision which supports timely completion and subsequent employability.
- Build and sustain relationships with external bodies to develop ITS's innovation and impact agenda.
- Promote the integration of research interests within ITS, across the University and externally.
- Maintain a portfolio of high impact research projects exploiting driving simulation within the academic community and for external policy-makers in government and business.

3.2 STUDENT EDUCATION

- Inspire students through research-led teaching on postgraduate taught courses, achieving high standards of student feedback.

- Provide a leading contribution to ITS and, as appropriate, Faculty policy and practice in teaching, promoting world class education and an exceptional student experience.
- Take a lead role in the design, development and planning of modules and programmes as appropriate.
- Develop innovative approaches to learning and teaching as appropriate.
- Provide supervisory support to postgraduate research students, providing guidance, mentorship and resolving issues as appropriate.

3.3 LEADERSHIP & MANAGEMENT

- Make a dynamic, ambitious, energetic contribution to the development and delivery of the academic mission of ITS and the University.
- Provide a major input to the strategic academic development and direction of ITS and the Faculty and to academic leadership in both ITS and driving simulation. In particular, take the role of Facility Director of UoLDS, leading the simulator's utilisation for research into the human factors of driving, intelligent transport systems and vehicle design. This will require shaping the ongoing development of the UoLDS, alongside defining a clear research strategy for the simulator complimentary to the wider S&T Research Group and leading and developing the simulator team.
- To maintain a safe and healthy work environment, including responsibility for health and safety of the UoLDS facility and its users, ensuring compliance with health and safety legislation and the undertaking of appropriate risk assessments
- Make a significant contribution to the University through its governance structures and by representing the University externally.
- Manage or lead major initiatives and/or multidisciplinary areas of work which improve ITS, Faculty or University performance.
- Actively promote and engage with the University's People Management Framework (<http://www.leeds.ac.uk/hr/development/pmf.htm>) to ensure high standards of employment practices and staff management across the School.
- Adhere to University values and standards, including the Leadership and Management Standard, and in line with University policies and procedures and local Faculty/School benchmarks as appropriate, upholding high professional standards and leading by example.
- Exercise leadership in alignment with the University Leadership and Management Standard (<http://www.sddu.leeds.ac.uk/sddu-University-of-leeds-leadership-and-management-standard.html>), ensuring that appropriate staff training and development is identified and undertaken.
- Sustain own continuing professional development as a leader.
- Comply with the University's financial and procurement procedures and regulations, undertaking relevant induction/training.
- Provide strategic leadership within the Safety and Technology group.

This job description provides a framework for the role and it may be necessary to undertake other duties commensurate with the post as might reasonably be required.

4 FURTHER INFORMATION

4.1 The Programme for Simulation Innovation (PSI)

PSI Theme 3 (Driving Simulation) is ambitious in its development and evaluation of perception/action driver models and you will take a leading role in this. Model characteristics will be identified for a number of basic driving tasks (e.g. slalom, obstacle avoidance, lane change, controlled stopping). These tasks will be performed by a cohort of JLR test drivers both in the University of Leeds Driving Simulator and on the JLR proving grounds. By exploiting these observations, the intention is to ultimately establish a mapping from cues (perceptions in the simulator) to control (handling of the real/virtual vehicle). By analysing the way in which such mapping is characterised in the simulator when compared to the real environment, it will be possible to quantify the degree to which a simulator is able to reproduce real world driving behaviour across the set of basic driving tasks.

You will work alongside co-investigators, Dr Erwin Boer and Dr Sunjoo Advani, and the existing research team of two post-doctoral researchers (skilled in driving simulator development) and four PhD students (control engineering, robotics and astrophysics backgrounds). Supported by the co-investigators, you will also take a leading supervisory role in each of the four PhD students' work as well as that of one MSc student. You will also be expected to take a leading role in future research proposals and emerging collaborations with JLR the areas of driver modelling and autonomous vehicle control systems.

4.2 The University of Leeds Driving Simulator

The main test-bed for Theme 3 is the University of Leeds Driving Simulator (UoLDS, www.uolds.leeds.ac.uk), the U.K's most advanced such research facility and made possible with funding from HEFCE's Science Research Investment Fund. Unlike many other simulators, UoLDS was initially designed and continues to develop using in-house expertise.

UoLDS builds on a legacy of driving simulation at the Institute for Transport Studies (ITS) and was designed and integrated in-house in partnership with various international suppliers of simulation technologies. Safety and Technology group staff at ITS were responsible for the underlying software architecture and core software functionality at the heart of the simulator and its integration with suppliers' specific hardware: vehicle cab (a heavily modified Jaguar S-type donated to the project by JLR), associated control loading (steering, brake and accelerator), an enhanced projection system (eleven channel, 300° field of view, passive stereo), a 4m diameter simulation dome (rigid glass-fibre construction) and a large amplitude eight degree-of-freedom motion system (with the ability to design, specify and tune various user-definable motion cueing algorithms).

5 PERSON SPECIFICATION

5.1 For the role of Associate Professor

Essential

- A PhD in Robotics, Engineering, Computing, Psychology or other scientific human-related discipline.
- A proven track record of operating within fast moving, complex research environment.

- A recognised authority within your field in both academic circles and amongst research users, with evidence of this including citation record, invitations to speak at conferences, medals and prizes and participation in national or international professional bodies.
- Innovative, with a significant and sustained track record of high quality, well cited publications in high quality journals.
- A passion and specialism in the investigation and modelling of the interaction between people and the emerging technologies, evolving infrastructure and new technologies of future transportation systems.
- Experience in leading large, interdisciplinary research projects.
- Experience of supervising research students.
- Experience of raising research funds from major national and international funding agencies.
- Excellent communication skills with experience of writing project reports and making technical presentations to industrial and academic research groups.
- Willing to work flexibly and in co-operation with other team members.
- An enthusiasm for all aspects of research, teaching and scholarship with the ability to motivate and support other staff in achieving their full potential.

Desirable

- Familiarity with cybernetics and the modelling of human perception and control and/or human-in-the-loop control systems.
- Familiarity with signal processing methods and synthesis of control systems.
- Familiarity with system identification and optimisation techniques.
- Relevant experience and working knowledge of modelling control systems in MATLAB and Simulink.
- Experience of analysing human behavioural and physiological data.
- Experience of research involving human behaviour observations and relevant ethical considerations.

5.2 For the role of Chair

Essential

- A PhD in Robotics, Engineering, Computing, Psychology or other scientific human-related discipline.
- Have a track record in your field, and understand the potential and opportunities for research innovation.
- A proven track record of operating within fast moving, complex research environment
- A passion and specialism in the investigation and modelling of the interaction between people and the emerging technologies, evolving infrastructure and new technologies of future transportation systems
- Demonstrate ability to provide academic leadership in research both by own work and through the encouragement and stimulation of colleagues.

- Demonstrate a track record of sustained delivery of ambitious and imaginative academic leadership.
- Evidence an excellent track record of research and publication meeting international standards of academic excellence, including a significant quantity of 3* and 4* REF equivalent published research.
- Show international links and evidence of effective engagement with and influencing national and international research agendas.
- Demonstrate ability to work across subject areas, linking appropriately with other disciplines and research groups.
- Demonstrate a track record of effective team working and collaborative development.
- Evidence willingness and capacity to take on a significant role in Faculty/School development.
- Demonstrate excellent organisational and communication skills.
- Demonstrate ability to think laterally, to be imaginative and to anticipate trends and opportunities.

Desirable

- Familiarity with cybernetics and the modelling of human perception and control and/or human-in-the-loop control systems.
- Familiarity with signal processing methods and synthesis of control systems.
- Familiarity with system identification and optimisation techniques.
- Relevant experience and working knowledge of modelling control systems in MATLAB and Simulink.
- Experience of analysing human behavioural and physiological data.
- Experience of research involving human behaviour observations and relevant ethical considerations.

6. INFORMAL ENQUIRIES

Informal enquiries may be made to:

Dr Hamish Jamson - tel +44 (0)113 343 5730, e-mail A.H.Jamson@its.leeds.ac.uk or
 Professor Greg Marsden – e-mail g.r.marsden@its.leeds.ac.uk

7. FURTHER INFORMATION

Terms and conditions of service applicable to appointments at professorial level can be viewed at: <http://hr.leeds.ac.uk/>.

Associate Professor: University Grade 9 (£47,328 - £54,841 p.a.)

Chair: within the Professorial range - minimum £59,913 p.a.

Appointment to an academic staff post confers the right to join the Universities' Superannuation Scheme (USS), although membership of this scheme is not a condition of employment. Members of the scheme are contracted out of the State Second Pension.

Participation in the Staff Review and Development Scheme is a condition of employment for academic and related staff.

The University of Leeds is an equal opportunities employer. We welcome applications from all sections of the community regardless of gender, ethnic origin or disability. Women and members of ethnic minorities and disabled people are under-represented in the University in posts at this level and the University would therefore particularly welcome applicants from members of such groups whilst, however, affirming that the appointment will be made entirely on merit.

University Values

All staff are expected to operate in line with the university's values and standards, which work as an integral part of our strategy and set out the principles of how we work together. More information about the university's strategy and values is available at <http://www.leeds.ac.uk/comms/strategy/>.

Additional Information

Details of the terms and conditions of employment for all staff at the University, including information on pensions and benefits, are available on the Human Resources web pages accessible at <http://hr.leeds.ac.uk/>

The Partnership

To be aware of and work in line with The Partnership working with students as members of a learning community to provide world class education and an excellent student experience. More information about the Partnership is available at <http://partnership.leeds.ac.uk>

Disclosure and Barring Service Checks

A Disclosure and Barring Service (DBS) Check is not required for this position. However, applicants who have unspent convictions must indicate this in the 'other personal details' section of the application form and send details to the Recruitment Officer.

Right to work

EEA nationals except those from Croatia have an automatic right to work and live in the UK. Swiss nationals also have these rights. If you are from outside the EEA or you are a national of Croatia, unless you already can evidence that you have the right to work in the UK with relevant documentation, you will need a certificate of sponsorship and leave to enter and remain in the UK before you can take up employment at the University.

Tier 2 certificates of sponsorship are normally granted only where the job requires at least a first degree. At this level the University is required to show that it is unable to recruit an appointable resident worker before a certificate of sponsorship can be granted. For jobs requiring a PhD the requirement is to show that the non EEA national is the best candidate for the job before a certificate will be granted.

Any offer of employment is made on the condition that we are granted permission by UK Visas and Immigration to employ you and that you are granted entry clearance/leave to remain (visa) in the UK. We will apply for a certificate of sponsorship once you have accepted the offer of employment. You are responsible for applying and paying for your appropriate entry clearance/leave to remain in the UK. Once a certificate of sponsorship has been obtained we will contact you to let you have the certificate number which you will need to submit your visa application.

You may not take up the employment until both the certificate of sponsorship and the entry clearance/leave to remain, if appropriate, have been approved. If you do any work before this you are working illegally and this may affect your application / continued employment. Your employment will be conditional upon your continued eligibility to live and work in the UK.

More information is available on the UK Visas and Immigration website at: <https://www.gov.uk/government/organisations/uk-visas-and-immigration>.

Disabled Applicants

Disabled applicants wishing to review building access are invited to contact the department direct. Additional information may be sought from the Recruitment Officer, email disclosure@leeds.ac.uk or tel + 44 (0)113 343 1723.

Disabled applicants are not obliged to inform employers of their disability but will still be covered by the Equality Act once their disability becomes known.

Further information for applicants with disabilities, impairments or health conditions is available in the applicant guidance.

Data Protection

The information you provide in your application will be used to consider your suitability for the post you have applied for. If your application is not successful, the information will be disposed of confidentially within 9 months. If your application is successful and you are appointed, your information and future data will be processed in accordance with the University's Data Protection Code of Practice. A copy of this code can be obtained from either the University of Leeds Human Resources Department or by visiting: http://www.leeds.ac.uk/secretariat/data_protection_code_of_practice.html.

Health and Safety Responsibilities

You are required to adhere to, and comply with the provisions of the Health and Safety at Work Act, related Regulations, and act in accordance to the University's Policy on Health and Safety which can be accessed via: <http://www.leeds.ac.uk/safety/>.

In addition, you are also required to co-operate with regard to the implementation of the Health and Safety arrangements and should not interfere with or misuse anything provided in the interest of Health, Safety and Welfare at Work.

Equality and Diversity Statement

The University of Leeds is proud to be a multi-cultural community. We value diversity, and are determined to ensure:

- that we treat all individuals fairly, with dignity and respect;
- that the opportunities we provide are open to all;
- that we provide a safe, supportive and welcoming environment – for staff, for students and for visitors.

We recognise that we still have work to do to secure a truly inclusive community, and we are committed to a wide-ranging plan of action to tackle discrimination and to promote

diversity.

The Equality and Diversity Statement forms part of the University's Equality and Diversity Policy, which applies to staff and students alike and, along with the Policy on Dignity and Mutual Respect, is available on the University's website at:
<http://www.equality.leeds.ac.uk/university-policies-2/>.

Further information and advice are available from The Equality Service, tel: +44 (0) 113 343 3927 or by email: equality@leeds.ac.uk.

Information for international staff moving to the UK can be found at:
<http://www.internationalstaff.ac.uk>.

8. HOW TO APPLY

Applicants should study the job description and the person specification, then complete the online application form, attaching any additional information as required by following the online instructions.

Applications should include the following:

- a completed **online application form** – <https://jobs.leeds.ac.uk>
- a copy of your **curriculum vitae**.

Closing date for applications:	Friday 29 th May 2015
Job reference number:	ENVTR1014
Interview Date:	Monday 6 th July 2015

Should you have any queries regarding the application process, please contact David Brett, Reward, Recruitment and Resourcing Administration Officer, tel +44 (0)113 343 5775, email: d.j.brett@adm.leeds.ac.uk.