UNIVERSITY OF LEICESTER

Job Summary

Job Title: **Professor in Autonomous Systems**
Grade: **10**
Salary: **Competitive**
Department: **School of Computing and Mathematical Sciences**
Hours/Contract: **Full-time and permanent**
Job Family: **Teaching and Research**
Reference: **10372**

Role Purpose

The University of Leicester is one of the top 200 universities in the world and top 25 in the UK according to the Times Higher Education (THE) World University Rankings 2021. Our ambitious staff and students work in cooperation to deliver research, teaching and learning of the highest quality. The School of Computing and Mathematical Sciences provides a rich and culturally diverse environment where both students and staff can thrive in a demanding yet cooperative and friendly atmosphere.

We are looking for a candidate in the area of Autonomous Systems and bioinspired approaches to autonomous systems, who will join the "Trustworthy Autonomous Systems" group led by Prof. Shigang Yue. The group has several staff interested in robotics and autonomous systems and works closely with partners such as Space Park Leicester and the Bioengineering group in the School of Engineering (with whom they share lab space). We welcome applicants in all areas of Robotics and Autonomous Systems, but applicants in Autonomous Systems and Robotics for Extreme Environments (e.g. Space) and Bioinspired Autonomous Systems for Robots, UAVs, and drones are particularly welcome.

The School has research links with Space Park Leicester, the College of Life Sciences (including the Leicester Institute for Precision Health and the Leicester NIHR Biomedical Research Centre), and Institute for Environmental Futures at the University of Leicester and aims to strengthen and deepen these research links. The School is a founding member of the College of Science and Engineering's Centre for AI, Data Analytics and Modelling (AIDAM), and has ambitions to lead a future UoL research institute in Data Science. The candidate should be able to shape and strengthen these aims of the School.

The roles include an expectation of leadership, development and delivery of research and teaching in their respective areas as well as contributions to the management of the School, College and University.

Main Duties and Responsibilities

World-Changing Research

- To make a significant contribution to research in Computer Science, consistent with the Trustworthy Autonomous Systems Group's existing activities in Autonomous perception, navigation and control, Bio-inspired information processing for autonomous applications, Bio-inspired visual information processing, bio-inspired motion perception, bio-plausible vision systems and applications, Autonomous systems and Robotics for extreme environments or other areas including robot design, modelling, control, learning, autonomy, and human-robotic interaction.
- To engage in interdisciplinary research with UoL partners, prefereably in Life and Health Sciences, Space Technology, or Climate, Earth Observation, Ecology or related areas.

- To produce research outputs of a high standard with best outputs internally and externally assessed as 4* (world-leading in terms of originality, rigour, and significance).
- To secure sustained external research income on an individual and collaborative basis, as appropriate to the field or discipline.
- To engage in research and enterprise leadership, making significant contributions to promoting and embedding an inclusive and respectful research culture.
- To provide high quality PGR supervision and training, contributing to securing funding for postgraduate and early career researchers and increasing PGR recruitment within the subject
- To lead on and contribute to the generation of income and external impact in your area in line with the enterprise agenda (including CPD, working with external organisations, both nationally and internationally, commercialisation, commissioned research and consultancy).
- To provide high quality PGR supervision and training, contributing to securing funding for postgraduate and early career researchers and increasing PGR recruitment within the subject discipline.

Research Inspired Education

- Undertake research-led teaching on undergraduate and/or postgraduate taught courses across the core UG computer science curriculum, and/or specialist areas of the taught PG curriculum, incorporating innovative teaching methods and the latest educational concepts.
- Contribute to the development, enhancement and achievement of the academic strategy in the School, through leading and engaging in activities/projects that drive innovation and have a beneficial impact
- Lead the development, revision and updating of programmes at undergraduate and/or postgraduate level, ensuring that they are inclusive, embed key skills, and incorporate sustainable development goals
- Lead teaching delivery and assessment to ensure consistent high quality teaching practice, providing timely formative student feedback and assessment for coursework and examinations
- Provide support and contribute to shaping a comprehensive range of student support initiatives at School, College, and/or University level, including, placement support, links with industry, personal tutor support, employability activities/projects and open days support
- Work with students to provide world class teaching and learning opportunities and an excellent student experience, regularly collecting and responding to student feedback
- Demonstrate wider educational impact through contributions to projects or scholarly discourse aimed at enhancing pedagogy or improving student outcomes
- Engage with scholarship and pedagogical research to continuously develop own teaching practice and that of others, leading to improved delivery and outcomes, with due regard for sector best practice.

Our Citizens

- Contribute to initiatives and activities that inform national and international policies an decisions, generating a positive impact beyond the University and making a tangible contribution to society.
- Contribute to the practice or debate around policies or practice, based on research evidence and/or scholarly activity.

- Participate in public engagement activities, including authoring articles in non-research publications and online, which raise the external profile of the University and share the benefit of Higher Education and research
- Actively engage with the academic discipline both nationally and internationally, undertaking roles on external committees, reviews and panels and/or contributing to conferences and volunteering initiatives which demonstrate impact beyond the University
- Participate in and undertake leadership roles at School, College, and/or University level contributing to management and administrative processes and committee structures
- Lead and support the recruitment, management and development of staff and students, through coaching, mentoring and supporting recruitment activities

Internal and External Relationships

Coordination of research, enterprise and teaching activities in your area within the School, the College, and the University. Collaboration with school, college and university administration and management.

Planning and Organising

Shaping the strategic direction of your own area of activity in research, enterprise and teaching.

Help develop school-, college- and university-level strategies and contribute to operational planning and implementation of such strategies.

Qualifications, Knowledge and Experience

Essential

- A PhD or equivalent in computer science, mathematics or cognate area *
- Expertise in the field of Autonomous Systems or Robotics including*:
    - *Autonomous perception, navigation and control;*
    - *Bio-inspired information processing for autonomous applications;*
    - *Bio-inspired visual information processing, bio-inspired motion perception, bio-plausible vision systems and applications;*
    - *Autonomous systems and robotics for extreme environments (including space), intelligent manufacturing, or medical applications*
    - *Other areas including robot design, modelling, control, learning, autonomy, and human-robotic interaction.*
- Evidence of a track record of sustained achievement in internationally leading research in terms of originality, significance and rigour, that is consistent with the School's aspiration to achieve the highest standards of excellence *
- Evidence of ability to engage in interdisciplinary research with other schools of the University *
- Evidence of ability to engage in collaborative research, knowledge-transfer activities or consultancy with industry *

Desirable

- Evidence of excellence in research and enterprise leadership.
- Evidence of collaborative research with leading groups or companies in the UK or abroad.
- Experience in organising seminars, workshops, conferences or other research meetings.
- Experience in supervision of undergraduate or postgraduate students.
- Academic Teaching Qualification or commitment to gain the appropriate category of HEA Fellowship.

Skills, Abilities and Competencies

Essential

- High level of proficiency in English, sufficient to undertake research, teaching and administrative activities utilising English Language materials and to communicate effectively with staff and students.*
- Proven ability or potential to generate external funding through research grants, consultancy, knowledge-transfer activities, or other sources to support research and its transition into applications.*
- Proven ability or potential to initiate work independently and as part of a team, both on research and teaching programmes.*
- Proven ability or potential to teach undergraduate and postgraduate students in lectures, tutorials and seminars, and to supervise postgraduate students.*
- Ability or potential to help develop curricula.
- Ability or potential to engage in outreach activities.
- Good written* and oral communication skills, along with presentation and training skills.
- Good interpersonal skills.
- Ability and willingness to teach undergraduate and postgraduate modules in a range of core Computer Science subjects, and to supervise UG and PG projects in such areas.*
- Good time management, personal organization, and interpersonal skills
- Ability to communicate and collaborate with existing staff in the School of Computing and Mathematical Sciences

Criteria to be used in shortlisting candidates for interview

Criminal Declaration

If you become an employee, you must inform your manager immediately, in writing, if you are the subject of any current or future police investigations/legal proceedings, which could result in a criminal offence, conviction, caution, bind-over or charges, or warnings.

Supporting University Activities

As a University of Leicester citizen, you are expected to support key university activities such as clearing, graduation ceremonies, student registration and recruitment open days. We expect all staff as citizens to work flexibly across the University if required.

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Job Summary

University Values
Inclusive - We are diverse in our makeup and united in ambition. Our diversity is our strength and makes our community stronger. **Inspiring** - We are passionate about inspiring individuals to succeed and realise their ambitions. We challenge our community to think differently, to get involved, and to constantly embrace new ideas. **Impactful** - As Citizens of Change we will generate new ideas which deliver impact and empower our community
Equity and Diversity
We believe that equity, diversity and inclusion is integral to a successful modern workplace. By developing and implementing policies and systems that challenge stereotypes across all aspects of our work, we have a culture that recognises and values the diverse contributions of our staff which benefits everyone. Our strong values of inclusivity and equity support our efforts to attract a diverse range of high quality staff and students, and identify our University as a progressive and innovative workplace that mainstreams equity, diversity and inclusion.