Job Title: Lecturer in Applied Mathematics
Grade: 8
Salary: £46,049 to £56,535 per annum, pro-rata if part-time
Department: Computing and Mathematical Sciences
Hours/Contract: Full-time or job share, permanent
Job Family: Teaching and Research
Reference: 12099

Role Purpose

Make a significant contribution to the research profile of the School by advancing fundamental and applied methodologies for the analysis, modelling, and interpretation of complex data at the interface of mathematics, statistics, and computer science. Contribute to research in areas such as applied statistics, artificial intelligence, machine learning, or data science, with a strong methodological focus and particular emphasis on the development of novel AI and data-driven methods, including probabilistic reasoning, optimisation, statistical learning, deep learning, and large-scale data analytics, and on their rigorous mathematical foundations. Engage in interdisciplinary collaboration with partners in health and life sciences, space, and environmental research.

Undertake high-quality inspirational teaching in subjects that align with the School's needs for delivering competitive undergraduate and postgraduate programmes in mathematics, applied statistics, data science, machine learning and related fields. You will also contribute to the development of new and the enhancement of existing programmes.

Main Duties and Responsibilities

Research

- To make a significant contribution to research in mathematics, consistent with the School's existing activities in artificial intelligence, machine learning, and data science, strengthening links between mathematical theory, algorithmic development, and real-world AI systems. Applications may span life and health sciences, space and Earth observation, environmental, ecological, climate modelling or related areas.

- To establish a sound research base in order to pursue individual and collaborative high-quality research, consistent with making a full active research contribution at the national and international levels.

- To collaborate with a number of key interdisciplinary partners including the Institute for Precision Health in the College of Life Sciences, Space Park Leicester and the Institute for Space, and the Institute for Environmental Futures.

- To apply for research funding, either individually or in partnership with colleagues within and outside the University, from various sources including research councils, charities, relevant government bodies and, where appropriate, private organisations.

- To publish research outputs and to disseminate the results of research and scholarship in internationally recognised journals and other appropriate outlets.

- To attend and present research findings and papers at academic and professional conferences, and to contribute to the external visibility of the School and the University.

- To bid for, manage and deliver highly regarded research projects, to generate research income that will sustain research support for your specialist area.

Teaching

- To play an active role in the development and delivery of teaching at both undergraduate and postgraduate levels, especially in areas related to applied statistics, data science, and machine learning. This includes the development of course materials as well as providing student support via tutorials and detailed feedback.

- To develop and teach modules that will enhance mathematics graduates' employment prospects.

- To maintain a broad knowledge of up-to-date research and scholarship in relevant fields to ensure that teaching meets the standards expected within a research-led University.

- To provide tutorial and project support for undergraduate and postgraduate students studying at Leicester.

- To undertake academic duties (e.g., setting examination papers, marking, invigilation and pastoral support of students) required to sustain the delivery of high-quality teaching.

- To support and comply with the University and School teaching quality assurance standards and procedures, including the provision of such information as may be required by the School or the University.

Administration

- To lead the development of programmes, modules and practices that will strengthen transferable and employability skills of mathematics graduates.

- To undertake such specific roles as may be reasonably required by the Head of School (or such persons to whom responsibility may have been delegated).

- To attend School meetings and to participate in other committees and working groups within the School, College and the University to which appointed or elected.

- To participate in relevant professional activities.

- To engage in continuous professional development, for example through participation in relevant staff development programmes in teaching and assessment, grant writing, postgraduate supervision, etc.

- To undertake, subject to the agreement of the Head of School and the University as appropriate, external commitments which reflect well upon and enhance the reputation of the School and the University.

- To ensure compliance with health and safety requirements in all aspects of work.

- To take responsibility for organising resources and effective decision making in support of research and teaching.

Internal and External Relationships

Collaboration with researchers at other schools of the University, Space Park Leicester and the University's research institutes, industrial partners and other higher education institutions and schools both nationally and internationally, including Dalian University of Technology (DUT).

Develop and foster links with potential employers of Leicester mathematics graduates on a regional, national and international level.

Academic, technical and administrative members of staff.

Coordination with central University offices as required.

Planning and Organising

To plan and deliver courses of lectures to undergraduate, taught postgraduate, or PhD students. Seek guidance from teaching and research mentors, programme directors, research group leads, other academic colleagues and administrative support staff.

Qualifications, Knowledge and Experience

Essential

- A PhD and/or post-doctoral research track record in an area relevant to the activity of the School applied statistics, artificial intelligence, machine learning, or data science *
- Track record of publication of high-quality research papers in high-impact journals and other reputable publication venues*
- Expert knowledge for teaching applied statistics, machine learning, or data science at undergraduate and master's degree level*
- Experience or knowledge of higher education and ability to use a range of delivery techniques* to inspire and engage students*
- Academic Teaching Qualification or commitment to gain the appropriate category of HEA Fellowship.

Desirable

- Established research profile in applied statistics, artificial intelligence, machine learning or data science and preferably with applications in life and health sciences, space and Earth observation, environmental, ecological, climate modelling or related areas
- Evidence of supervision/co-supervision of PhD students in a research-led environment
- Evidence of undergraduate teaching experience including lecturing, supervision, setting assessment and use of e-learning technologies
- Evidence of ability/potential to contribute to School's current curriculum
- Membership or/and evidence of activity with professional mathematical societies (for example, IMA or LMS).

Skills, Abilities and Competencies

Essential

- Ability to teach and to supervise projects within the general area of applied statistics, machine learning or data science, at both undergraduate and postgraduate level

- High level of proficiency in English (both in writing and verbally), sufficient to undertake research, teaching and administrative activities utilising English Language materials and to communicate effectively with staff and students at the University of Leicester*

- Good interpersonal and personal skills and traits including:

    o Selflessly balancing the needs of colleagues, the organisation against your personal goals

    o Time management and prioritisation

    o Ability to work in teams and to be able to balance organization and personal goals

    o Solution-focussed and problem-solving mentality

- Willingness and ability to travel and work overseas, specifically at the Dalian University of Technology (DUT)

Criteria to be used in shortlisting candidates for interview

Teaching Requirements

If requested, you may be expected to undertake teaching, tutoring and administrative duties across a range of modules, particularly in the delivery of teaching modules in China that are part of the Department's collaborative partnership programmes in the People's Republic of China.

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 encouraged to support key university activities such as clearing, graduation ceremonies, student registration and recruitment open days. We encourage all staff as citizens to work flexibly across the University if required. If supporting these activities is likely to affect your workload, please speak to your line manager in the first instance

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

Freedom of Speech

The University is committed to upholding freedom of speech and academic freedom within the law throughout our recruitment processes. We ensure that all candidates are considered based on merit and suitability for the role, without regard to their lawful viewpoints or the expression of challenging or controversial ideas. Our recruitment policies and practices are designed to protect applicants from discrimination or adverse treatment on the basis of their opinions, and to foster an environment where open debate and diverse perspectives are valued as essential to our academic mission.

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 equality 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 equality, diversity and inclusion.