THE UNIVERSITY OF MANCHESTER

PARTICULARS OF APPOINTMENT

FACULTY OF SCIENCE & ENGINEERING

SCHOOL OF NATURAL SCIENCES

DEPARTMENT OF MATHEMATICS

PROFESSOR OF APPLIED MATHEMATICS

VACANCY REF: SAE-027182

Salary:	Salary will be competitive within the professorial scale according to relevant experience and qualifications.
Hours:	Full time (1 FTE)
Duration:	Permanent
Location:	Oxford Road, Manchester
Proposed Interview Date:	26th February 2025

Enquiries about the vacancy, shortlisting and interviews:
Name: Head of Applied Mathematics, Sergei Fedotov or Head of Department, Andrew Hazel
Email: Sergei.Fedotov@manchester.ac.uk / Andrew.Hazel@manchester.ac.uk

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Job Description
Applications are invited for a Professor of Applied Mathematics, to start in September 2025 or at a mutually agreed alternative date. We are looking for an outstanding researcher with an established research reputation in applied mathematics, who is seeking a friendly, supportive and collegial environment in which to build activity at the interface between mathematics and artificial intelligence, machine learning, data science and contemporary topics in applied mathematics. Applicants should have research experience in an area that complements and extends existing research within the Department of Mathematics and a genuine commitment to, and enthusiasm for, teaching, research and the development of others.

The Department is one of the six partners of the recently funded ProbAI Hub, https://www.probai.uk Over the next five years, the Hub's mission is to make mathematical and computational advances in probabilistic AI by bringing together researchers with mathematical skills from diverse areas, including applied mathematics and numerical analysis. It will grow a cohort of postdoctoral fellows and affiliated PhD students, organise research-focused events and foster links with industry partners. We are particularly keen to attract applicants who can contribute to the Hub's applied mathematics activities at Manchester.

The Department of Mathematics has strong connections with the Department of Computer Science, offering a joint undergraduate degree and providing the environment for a number of strategically important research collaborations. The Department of Computer Science is currently going through a period of strategic growth which has recently seen a number of key appointments in research areas that intersect closely with those in the Department of Mathematics. This will continue further via investment in initiatives focused on the area of research in AI Fundamentals.

Research
The successful applicant will join the Applied Mathematics Group, and will be expected to enhance the international reputation of the Group, Department and University by:

- undertaking research of the highest quality, in collaboration with colleagues in the University and other institutions as appropriate, and publishing the results in world-leading
- journals, books or other appropriate outlets
- disseminating research results at relevant national and international conferences or via
- other media
- securing external research funding from relevant bodies
- attracting and supervising postgraduate research students and research assistants, associates and fellows
- providing leadership for research activity locally in the Department of Mathematics and
- Nationally

Teaching
The successful applicant will be expected to contribute to the delivery of a world-class educational programme by:

- working independently and with colleagues to teach undergraduate and postgraduate
- students by means of lectures, seminars, tutorials and examples classes, assuming
- responsibility for courses where appropriate
- supervising undergraduate and postgraduate projects
- setting and marking assignments and examination papers in accordance with the Department's agreed procedures
- developing teaching material and learning experiences for students in the light of current educational practice
- participating in the strategic planning and development of courses within the framework of Department, School and Faculty committees
- acting as an academic advisor to undergraduate students in accordance with the Department's current practice
- supervising postgraduate students in their research and in their preparation of dissertations and theses

Administration
The successful applicant will undertake managerial and administrative tasks attached to their responsibilities in teaching and research, and any others as requested by the Head of Group or the Head of Department

Other Requirements

- All staff are expected to adhere to all policies and procedures of the University including those relating to Equal Opportunities, Harassment, Health and Safety, and Smoking at Work

Person Specification

It is essential that the individuals appointed have

- an outstanding record of original research in an area of applied mathematics that complements
- and extends existing research in the Department, including numerical analysis, inverse problems, uncertainty quantification, machine learning theory, optimisation and dynamical systems including quantum chaos, demonstrated by internationally leading published research outputs, and appropriate esteem indicators
- a successful track record of research leadership and the ability to provide leadership for mathematics research activities at a national and international level
- a successful track record of securing external research funding
- a genuine enthusiasm for and a track record of excellent teaching at both undergraduate and
- postgraduate levels, including course unit design in applied mathematics
- a track record of successful supervision of postgraduate research students and/or postdoctoral
- researchers
- a strong personal commitment to Equality, Diversity, Inclusion and Accessibility, as evidenced
- by a record of activity in this area
- the skills to communicate effectively with staff and students

It is desirable that the individuals appointed have

- a successful track record of coordinating research projects between multiple institutions
- experience of curriculum design for undergraduates and/or postgraduates in data science
- experience of leading collaborative projects resulting in mathematical or scientific computer
- software
- significant experience of knowledge transfer via interaction with industry or public engagement

MANCHESTER 1824
The University of Manchester

Background
Manchester is the largest city in Northern England, with a metropolitan area population of over 2.5 million. Traditionally a commercial and industrial powerhouse, today it is also a cosmopolitan centre of education, media, arts and sport. Internationally famed for football, popular music and nightlife, it also has world-class facilities for music, participation in sport and theatre. Direct rail links connect to cities across the UK, and the international airport provides direct flights across Europe and to major hubs worldwide. Just outside the city, the Peak District National Park provides some of the country's best loved terrain for outdoor activities, while the Yorkshire Dales, Eryri and Lake District National Parks are easily accessible by public transport.

The **University of Manchester** (www.manchester.ac.uk) was formed in 2004 by combining the Victoria University of Manchester and UMIST. It is the largest non-federal university in the UK, with an annual income of over £1billion, over 12,000 staff and almost 40,000 students. It and its predecessor institutions have a distinguished history of research and teaching, tracing back to 1824 and having produced 25 Nobel laureates. Research highlights include Rutherford's work on splitting the atom (leading to the 1908 Nobel prize for physics), the world's first stored-program computer (the Manchester University Mark I), the world's first steerable radio telescope (at Jodrell Bank), the birth of chemical engineering, and most recently the discovery of graphene (leading to the 2010 Nobel prize for physics). The University of Manchester consistently ranks among the leading universities in the world and in Europe (https://www.manchester.ac.uk/study/experience/reputation/rankings/). The University has more than half a million alumni in 190 countries.

The **Department of Mathematics** (www.maths.manchester.ac.uk) is one of the largest mathematics schools/departments in the UK, with approximately 90 permanent academic staff, 30 research assistants and fellows, 1,500 undergraduate students and 200 postgraduate students. Based in the purpose-built Alan Turing Building, we pride ourselves on providing a friendly, supportive and collegial environment to foster world-class research and teaching. The Department is divided for management purposes into three groups, with focus respectively on pure mathematics, applied mathematics, and probability & statistics.

Digital Futures is a cross-faculty initiative that connects over 1400 researchers from different disciplines. As part of Digital Futures, Manchester's Institute for Data Science & Artificial Intelligence acts as an access point to the University's expertise in data science and artificial intelligence. Manchester has an engaged data science community of over 600 investigators, with methodologists embedded in Schools across the University addressing problems in extracting meaning from data, managing data volume, the variety of data used in analyses, the velocity with which it is produced and the veracity of those data. Manchester is also a member of the Turing network, working directly with the Alan Turing national institute for data science and artificial intelligence

Families and Work-life Balance. The Department and University are committed to the well-being and work-life balance of all staff. We have a package of family-friendly policies covering flexible working,

career breaks and entitlement to paid maternity, paternity and adoption leave. For more details on these and other benefits see https://www.manchester.ac.uk/connect/jobs/benefits-working-here/. The Department is fully committed to Athena SWAN principles to promote women in science and is a supporter of the LMS Good Practice Scheme; for more details of our activities relating to Social Responsibility see https://www.maths.manchester.ac.uk/connect/social-responsibility/. While this is a full-time post, applications from individuals seeking part time, job share, or flexible working arrangements are welcome