Andrew Wiles Building, Radcliffe Observatory Quarter, Woodstock Road, Oxford, OX2 6GG

Job description and selection criteria

Job title	Senior Research Fellow in Data Science
Division	Mathematical, Physical and Life Sciences
Department	Mathematical Institute and St Hugh's College
Location	Andrew Wiles Building, Radcliffe Observatory Quarter, Woodstock Road, Oxford, OX2 6GG
Grade and salary	Grade 8: Salary range £37,756 to £45,053 p.a.
Hours	Full time
Contract type	3 years fixed-term
Reporting to	Nomura Professor of Mathematical Finance and Director, Nomura Centre for Mathematical Finance (currently Professor Xunyu Zhou)
Vacancy reference	112585
Additional information	This position is funded by the Financial Data Technologies Ltd. and is subject to a 9 month probationary period. **(PLEASE NOTE: Applicants are responsible for contacting their referees and making sure that their letters are received by the closing date)**

Introduction

The University

The University of Oxford is a complex and stimulating organisation, which enjoys an international reputation as a world-class centre of excellence in research and teaching. It employs over 10,000 staff and has a student population of over 22,000.

Most staff are directly appointed and managed by one of the University's 130 departments or other units within a highly devolved operational structure - this includes over 6,500 'academic-related' staff (postgraduate research, computing, senior library, and administrative staff) and over 2,700 'support' staff (including clerical, library, technical, and manual staff). There are also over 1,600 academic staff (professors, readers, lecturers), whose appointments are in the main overseen by a combination of broader divisional and local faculty board/departmental structures. Academics are generally all also employed by one of the 38 constituent colleges of the University as well as by the central University itself.

Our annual income in 2012/13 was £1,086.9m. Oxford is one of Europe's most innovative and entrepreneurial universities: income from external research contracts exceeds £436.8m p.a., and more than 80 spin-off companies have been created.

For more information please visit www.ox.ac.uk/staff/about_the_university.html

The University of Oxford is a member of the Athena SWAN Charter and holds an institutional Bronze Athena SWAN award.

MPLS Division

Oxford is widely recognised as one of the world's leading science universities. The disciplines within the MPLS Division regularly appear at the highest levels in world rankings and have been evaluated as conducting world-leading and internationally excellent research in UK research assessments.

The MPLS Division's 10 departments and 3 interdisciplinary units span the full spectrum of the mathematical, computational, physical, engineering and life sciences, and undertake both fundamental research and cutting-edge applied work. Our research addresses major societal and technological challenges and is increasingly focused on key interdisciplinary issues. We collaborate closely with colleagues in Oxford across the medical sciences, social sciences and humanities, and with other universities, research organisations and industrial partners across the globe in pursuit of innovative research geared to address critical and fundamental scientific questions.

MPLS is proud to be the home of some of the most creative and innovative scientific thinkers and leaders working in academe. Our senior researchers have been awarded some of the most significant scientific honours (including Nobel prizes and prestigious titles such as FRS and FR.Eng) and we have a strong tradition of attracting and nurturing the very best early career researchers who regularly secure prestigious fellowships. The Division is also the proud holder of six Athena Swan Awards (4 Silver and 2 Bronze) illustrating our commitment to ensure good practice and to encourage women in science at all levels in the division.

The Mathematical Institute

The Mathematical Institute, as Oxford's Department of Mathematics is known, is one of the leading mathematics departments in the world, with a significant research profile in central areas of contemporary mathematical research. It is the main focus of mathematics research in Oxford for both pure and applied. The inclusive nature and overall size of the department are key factors in the provision of an outstanding research environment for its members. The large number of faculty, post docs and students in the department, all supported by excellent facilities, allows us to maintain a critical mass in research groups encompassing a wide spectrum of mathematics, while the integrated nature of the department fosters collaboration between fields.

The research activities of the Institute are organised within a framework of interlinked and overlapping research groups and centres. The fact that these research groups have indistinct boundaries and nontrivial intersections reflects a widespread recognition within the department of the unity of mathematics and the importance of cross-fertilisation between fields. Further information about these research groups can be found at http://www.maths.ox.ac.uk/research.

The spread of research interests is also reflected to a large extent by the current holders of our statutory chairs; these are listed at http://www.maths.ox.ac.uk/about/statutory-professors.

Many members of the Institute have received prestigious prizes and other special recognition for their work; some recent examples can be found at http://www.maths.ox.ac.uk/news/awards-prizes. We have recently been awarded an Athena SWAN Bronze Award from the Athena SWAN Charter for Women in Science (http://www.athenaswan.org.uk/content/athena-swan).

The Institute acts as the focus of activity in pure and applied mathematics. Its facilities, such as the Whitehead Library (for research in Mathematics) and the computer network, are available for all members of the faculty. The Mathematical Institute has recently moved into newly built accommodation on the University's recently acquired Radcliffe Observatory Quarter.

With an annual intake of approximately 300 undergraduates on various courses, some offered jointly with other departments, 100 students on taught masters degree courses and 40 doctoral students, the building will be a main focus for teaching, which will take place in spacious, purpose-designed lecture theatres and meeting rooms on the mezzanine floor, which also houses the café. This mezzanine floor will also be the focus for external conferences and events, primarily held out of term. The large lecture theatre seating over 300 is one of the largest in the university and is considered a prime venue. Graduate students are accommodated in the upper floors, with shared study areas or offices. The department also hosts a large number of visitors, both short-term and long-term, who are attached to different research groups.

The Oxford-Nie Financial Big Data Lab

With the fast development of information technology, financial markets are generating huge volumes of data at a rapid pace. With massive amounts of internal information and an ever-growing pool of unstructured data, financial institutions have yet to take advantage of all that that data has to offer. Research on financial big data has until now been less prominent, but has the potential to make a major contribution in shaping investment strategies and creating new businesses. The Oxford-Nie Financial Big Data Lab has been established under the generous support of the Financial Data Technologies Ltd., a Hong Kong based company. It is the first research laboratory in this area at a major university. It will be at the front line of data science research applied to finance; it will provide a platform for research collaboration between academics, practitioners and regulators; and it will generate research that informs how financial firms should manage big data and make the best out of it.

St Hugh's College

This post is to be held in conjunction with a non-stipendiary Research Fellowship at St Hugh's College. St Hugh's College was founded in 1886 and now has some 425 undergraduates, around 300 graduates, a fellowship of 68, 30 college lecturers and a non-academic staff of 90. From its beautiful site in North Oxford, St Hugh's promotes a thriving culture of research and intellectual engagement. The Fellow's salary and main research support will be provided through the Nomura Centre. He or she will be entitled to lunch and dinner at common table in St Hugh's College free of charge. There may be an opportunity to offer a limited amount of undergraduate teaching for the College (for which additional payment will be made). More information about St Hugh's College can be found at www.st-hughs.ox.ac.uk

Job description

Overview of the role and Core duties

Applications are invited for the post of Senior Research Fellow Reporting to the Nomura Professor of Mathematical Finance and Director, Nomura Centre for Mathematical Finance (currently Professor Xunyu Zhou), the post holder is a member of Mathematical and Computational Finance Group (MCFG) providing day-to-day supervision for research assistants.

The duties of the Fellow will be to carry out research in data science applied to finance, within the Mathematical and Computational Finance Group (MCFG) and to write this up for publication. The fellow will be expected to participate fully in the activities of the research group, particularly its cross-disciplinary aspects.

The post will be based at the newly established Oxford-Nie Financial Big Data Lab (described above), sponsored by the Financial Data Technologies (FDT) Ltd, and the Fellow will be expected to assist with the administration of this lab. It is hoped that the Fellow will interact with members of FDT's research staff in Hong Kong and elsewhere.

MCFG runs a full-time and a part-time MSc Programmes simultaneously, each admitting about 30 students each year. There may be some opportunities for the Fellow to undertake a limited amount of teaching on these courses.

General Responsibilities and duties

Develop research questions within a specific context, conduct individual research, analysing detailed and complex qualitative and/or quantitative data from a variety of sources, and generate original ideas by building on existing concepts

Develop and implement new research methodologies and materials/appropriate analytical protocols and techniques to support research

Regularly write research articles at a national level for peer-reviewed journals, book chapters, and reviews. Present papers at national conferences, and lead seminars to disseminate research findings

Agree clear task objectives, organise, and delegate work to other members of the team and coach other members of the group on specialist methodologies or procedures

Raise research funds through grant applications and manage own area of a larger research budget

Share responsibility for shaping the research group's plans and the writing of group-funding applications for new research projects

Represent the research group at external meetings/seminars, either with other members of the group or alone

Carry out collaborative projects with colleagues in partner institutions, and research groups

Selection criteria

Essential

§ To have a PhD degree awarded at the time of taking up the position, in statistics,

computer science, or mathematical finance

§ To have research experience and/or interests in statistical modelling of financial data, and data mining or machine learning in financial context

§ To be able to demonstrate an excellent ability in research and to attract research funding in the above areas

§ To have a publication record in refereed journals commensurate with their career to date

Working at the University of Oxford

For further information about working at Oxford, please click on the link below: www.ox.ac.uk/about_the_university/jobs/research/

How to apply

If you consider that you meet the selection criteria, click on the **Apply Now** button on the 'Job Details' page and follow the on-screen instructions to register as a user. You will then be required to complete a number of screens with your application details, relating to your skills and experience. When prompted, please provide details of two referees. You will also be required to upload a curriculum vitae, list of publications, a statement of research interests and supporting statement. The supporting statement should describe how you meet the selection criteria outlined above.

Please save all uploaded documents to show your name and the document type.

Applicants should ask their referees to send their letters of reference DIRECTLY to

The Administrative Assistant (Vacancies)
The Mathematical Institute, Andrew Wiles Building, Radcliffe Observatory Quarter,
Woodstock Road, Oxford OX2 6GG
Tel: 01865 273525: Fax: 01865 615323: Email: vacancies@maths.ox.ac.uk

by the closing date (a letter by email is sufficient) **quoting the vacancy reference 112585.** Referees should preferably not be from the same institution and whenever possible one should be the applicant's current, or most recent, supervisor. **NOTE: referees letters must be received from your referees by the closing date for your application to be complete.**

All applications must be received by **12:00 noon UK time on Monday 30th June 2014.**

Information for Priority Candidates

*A priority candidate is a University employee who is seeking redeployment owing to the fact that he or she has been advised that they are at risk of redundancy, or on grounds of ill-health/disability. Priority candidates are issued with a redeployment letter by their employing departments and this letter **must** be attached to any application they submit.*

The priority application date for this post is 12 noon UK time on Monday 16th June 2014

Full details of the priority application process are available at:
www.admin.ox.ac.uk/personnel/end/red/redproc/prioritycandidate

Should you experience any difficulties using the online application system, please email recruitment.support@admin.ox.ac.uk

To return to the online application at any stage, please click on the following link
www.recruit.ox.ac.uk

Please note that you will be notified of the progress of your application by automatic e-mails from our e-recruitment system. **Please check your spam/junk mail** regularly to ensure that you receive all e-mails.