Job description and selection criteria

Job title	Departmental Lecturer (Theoretical Computer Science)
Division	MPLS
Department	Computer Science
Location	Wolfson Building, Parks Road, Oxford.
Grade and salary	Grade 8: Salary £38,896 – £46,414 p.a.
Hours	Full Time
Contract type	Fixed term for up to 5 years from 1 April 2016
Vacancy reference	121657

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 11,000 staff and has a student population of over 22,000.

Our annual income in 2013/14 was £1,174.4m. Oxford is one of Europe's most innovative and entrepreneurial universities: income from external research contracts exceeds £478.3m p.a., and more than 80 spin-off companies have been created.

Oxford is a collegiate university, consisting of the central University and colleges. The central University is composed of academic departments and research centres, administrative departments, libraries and museums. There is a highly devolved operational structure, which is split across four academic divisions, Academic Services and University Collections and University Administrative Services. For further information, please see:
www.ox.ac.uk/staff/about_the_university/new_to_the_university/structure_of_university.

For more information please visit http://www.ox.ac.uk/about

The Mathematical, Physical, and Life Sciences Division (MPLS)

The Mathematical, Physical, and Life Sciences (MPLS) Division is one of the four academic divisions of the University. 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. In the results of the six-yearly UK-wide assessment of university research, REF2014, the MPLS division received the highest overall grade point average (GPA) and the highest GPA for outputs. We received the highest proportion of 4* outputs, and the highest proportion of 4* activity overall. More than 50 per cent of MPLS activity was assessed as world leading.

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 eight Athena Swan Awards (4 Silver and 4 Bronze) illustrating our commitment to ensure good practice and to encourage women in science at all levels in the division.

We have around 6,000 students and play a major role in training the next generation of leading scientists. Oxford's international reputation for excellence in teaching is reflected in its position at the top of the major league tables and subject assessments. MPLS academics educate students of high academic merit and potential from all over the world. Through a mixture of lectures, practical work and the distinctive college tutorial system, students develop their ability to solve major mathematical, scientific and engineering problems.

MPLS is dedicated to bringing the wonder and potential of science to the attention of audiences far beyond the world of academia. We have a strong commitment to supporting public engagement in science through initiatives including the Oxford Sparks portal (http://www.oxfordsparks.net/) and a large variety of outreach activities; these are crucial activities given so many societal and technological issues demand an understanding of the science that underpins them. We also endeavour to bring the potential of our scientific efforts forward for practical and beneficial application to the real world and our desire is to link our best scientific minds with industry and public policy makers.

For more information about the MPLS division, please visit: http://www.mpls.ox.ac.uk/

Department of Computer Science

The Department of Computer Science was established in 1957, making it one of the longest-established Computer Science departments in the country. It is one of the UK's leading Computer Science Departments (ranked first in a number of international rankings). The Research Excellence Framework (REF) in December 2014 resulted in 74 members of the Department having 53% of their research activity ranked in the top category of 4* (world-leading). Overall, we received an average of 3.34 across the department (3* being internationally excellent). A significant majority of the Department are active in externally sponsored research, with both government and industrial funding. At present there are 69 members of academic staff and almost 100 research staff.

The Department has close links with government, industry, and other departments within the University. Among the latter are Mathematics, Engineering, Physics, Statistics and a number of life sciences departments. The Department is housed across multiple sites within the University's South Parks Road Science area, facilitating strong collaborative links with research groups and institutes in closely allied areas (including the Oxford Internet Institute and the Oxford e-Research Centre). This is an essentially inter-disciplinary activity which is at present attracting major funding from a number of sources. At present the Department holds over £50m in external research contracts.

Research in the Department is currently managed in seven themes:

- *Algorithms* (led by Professor Leslie Ann Goldberg, and including Professors Paul Goldberg, Elias Koutsoupias, and Peter Jeavons) covers computational complexity, algorithmic game theory, and constraint satisfaction;
- *Automated Verification* (led by Professor Marta Kwiatkowska, and including Professors Daniel Kroening, Gavin Lowe, Tom Melham, Joel Ouaknine, and James Worrell) covers probabilistic and software model checking, time and concurrency, and hardware;
- *Computational Biology* (led by Professor David Gavaghan, and including Professors Kevin Burrage, Helen Byrne, and Blanca Rodriguez) is one of the world's leading groups building computational models of biological systems, and is particularly well-known for its work on the heart;
- *Foundations, Logic and Structures* (led by Professor Samson Abramsky, and including Professors Bob Coecke and Luke Ong) includes groups working on quantum information and computation, game semantics, and verification;
- *Information Systems* (led by Professor Ian Horrocks, and including Professors Michael Benedikt, Bernardo Cuenca Grau, Nando de Freitas, Georg Gottlob, Thomas Lucasiewicz, Boris Motik, Stephen Pulman, and Michael Wooldridge) has groups working on databases, knowledge representation and reasoning, multi-agent systems, and computational linguistics;
- *Programming Languages and Software Engineering* (led by Professor Jeremy Gibbons, and including Professors Jim Davies, Marina Jirotka, Nigel Shadbolt, Niki Trigoni, and Hongseok Yang) covers model-driven development, functional programming, program analysis, cyber physical systems, social computing, and web science;
- *Security* (led by Professor Bill Roscoe, and including Professors Sadie Creese, Cas Cremers, Michael Goldsmith, and Andrew Martin) specialises in cybersecurity, protocol analysis, systems security, trusted computing, human-centred security, and networking.

For more information please visit: http://www.cs.ox.ac.uk/

Summary of the University's Equal Opportunities Policy

The policy and practice of the University of Oxford require that all staff are afforded equal opportunities within employment. Entry into employment with the University and progression within employment will be determined only by personal merit and the application of criteria which are related to the duties of each particular post and the relevant salary structure. In all cases, ability to perform the job will be the primary consideration. Subject to statutory provisions, no applicant or member of staff will be treated less favourably than another because of age, disability, gender reassignment, marriage or civil partnership, pregnancy or maternity, race, religion or belief, sex, or sexual orientation.

Overview of the role

The opportunity has arisen to appoint a full-time Departmental Lecturer in Computer Science.   This will be a fixed-term appointment for up to five years from 1 April 2016. The salary will be on a scale up to £45,954 per annum (pay award pending). The start date of the contract will be negotiable up to early October 2016.

The post holder will be a full member of the team responsible for teaching undergraduate and graduate students within the Department of Computer Science. The post holder will also be expected to conduct research in the broad area of Theoretical Computer Science. There is a preference for applicants in the areas of Algorithms, Automated Verification, Computational Algebra and Number Theory, and Logic.

Summary of duties

The main duties of the successful candidate are as follows:

- To engage in independent research within the broad discipline of Theoretical Computer Science.
- To participate in the teaching and administrative work of the Department, including lecturing, project supervision, laboratory work, examining, admissions, and syllabus development.
- To supervise, or assist in the supervision of graduate students as required.

Responsibilities/duties

- Undertake advanced academic study to underpin lectures and class teaching
- Lecture, tutor, conduct practical classes using computer equipment, and supervise undergraduate and postgraduate students
- Produce lecture notes, course materials, reading lists, and reference guides
- Engage in assessment and university examining
- First contact for student matters relating to attendance, conduct, coursework, performance, and welfare (referring matters to appropriate others)
- Plan and organise specific areas of the syllabus and contribute to syllabus development
- Participate in the undergraduate and graduate student admissions processes
- Gather and analyse feedback from students, colleagues, and examiners
- Modify course design, content, or delivery and propose changes to regulations as appropriate

- Allocate tasks and provide day-to-day supervision to demonstrators/teaching assistants, technical or academic support staff, junior research assistants, and masters and doctoral students working on the research project(s)
- Manage independent research projects or specific areas of research within a broad programme, to include: developing research questions within a specific context; conducting original research; analysing qualitative and/or quantitative data from a variety of sources, and developing appropriate analytical protocols and techniques to support research
- Identify sources of research income, develop proposals, and make funding applications to secure it
- Write research articles for prestigious peer-reviewed journals, book chapters, and reviews, present papers at conferences, and lead seminars to disseminate research findings
- Liaise with examiners and academic staff regarding student performance and the development of new courses, and with funding bodies, stakeholders, and researchers in related fields to share information and expertise
- Share in the work of departmental committees developing academic strategies and policies
- Carry out collaborative projects with colleagues in partner institutions, and research groups
- Train other members of the team on pedagogy, specialist methodologies, or procedures

Selection criteria

Essential

- A doctoral degree in Computer Science, with post-qualification teaching and research experience
- An aptitude for teaching and awareness of pedagogic methods
- Sufficient depth and breadth of knowledge in the subject to develop course units in a sufficient variety of Computer Science areas
- Strong publication record in Theoretical Computer Science (with a preference for research in Automated Verification, Computational Algebra or Number Theory, or Logic) and familiarity with the existing literature and research in the field.
- Sufficient specialist knowledge in the discipline to develop research projects and methodologies
- Experience of qualitative/quantitative research and analytical techniques
- Evidence of ability to write research proposals

Working at the University of Oxford

For further information about working at Oxford, please see:

http://www.ox.ac.uk/about_the_university/jobs/research/

Salary and Benefits

The post, which is a full time appointment, is available for up to 5 years, has a salary on the University grade 08S scale (currently £38,896 - £46,414 p.a). This includes membership of the Universities Superannuation Scheme (USS) and has an annual leave entitlement of 38 days per year (inclusive of all public holidays and university closed periods).

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 and indicate whether we can contact them at this stage. You will also be required to upload a CV and supporting statement. The supporting statement should describe what you have been doing over at least the last 10 years. This may have been employment, education, or you may have taken time away from these activities in order to raise a family, care for a dependant, or travel for example. Your application will be judged solely on the basis of how you demonstrate that that you meet the selection criteria outlined above and we are happy to consider evidence of transferable skills or experience which you may have gained outside the context of paid employment or education.

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

All applications must be received by **midday** on the closing date stated in the online advertisement.

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.

All applications will be considered by the selection committee as soon as possible after the closing date. All shortlisted candidates will be asked to give a short lecture to an audience of general computer scientists and will then be interviewed by the committee later in the day.