University of Oxford Department of Computer Science

Job description and selection criteria

Job title	Research Assistant
Division	MPLS
Department	Computer Science
Location	Wolfson Building, Parks Road, Oxford.
Grade and salary	Grade 7: Salary £29,541-£36,298 p.a. pro rata
Contract type	Fixed term for up to 2 years
Hours	Full Time

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 21,000.

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 5,900 'academic-related' staff (postgraduate research, computing, senior library, and administrative staff) and 2,820 '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 2010/11 was £919.6m. Oxford is one of Europe's most innovative and entrepreneurial universities: income from external research contracts exceeds £376m p.a., and more than 70 spin-off companies have been created.

For more information please visit www.ox.ac.uk

MPLS Division

The academic administration of the University is conducted through four divisions (Humanities, Social Sciences, Mathematical, Physical and Life Sciences, and Medical Sciences). The Mathematical, Physical and Life Sciences Division consists of ten constituent departments: the Department of Chemistry, Computing Laboratory, the Department of Earth Sciences, the Department of Engineering Science, the Department of Materials, Mathematical Institute, the Department of Physics, Department of Plant Sciences, Department of Zoology and Statistics. The division provides a framework for interdisciplinary teaching and research. There are also links with the Medical Sciences Division.

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

Department of Computer Science

The Department of Computer Science, University of Oxford has one of the longest-established Computer Science departments in the country. Formerly known as the Oxford University Computing Laboratory, it is home to a community of world-class research and teaching. Research activities encompass core Computer Science, as well as Security, Algorithms, computational biology, quantum computing, computational linguistics, information systems, software verification and software engineering. The department is home to undergraduates, full-time and part-time Master's students, and has a strong doctoral programme.

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

Job description

Research topic	Bio-Inspired Quantum Technologies
Principal Investigator / supervisor	Professor Samson Abramsky
Funding partner	Oxford Martin Programme

Overview of the role

Applications for invited for a Research Fellowship within the Oxford Martin Programme on Bio-Inspired Quantum Technologies, an interdisciplinary consortium comprising 20 permanent academic staff members within the Oxford Martin School at Oxford University.

The Oxford Martin Programme, directed by Professors Vlatko Vedral and Dieter Jaksch, aims to develop a new methodology for overcoming the extreme fragility of quantum memory by learning how biological molecules shield fragile quantum states from the environment.

This Fellowship, one of 6 being appointed within the Programme, is available on a one or two-year full-time fixed term basis, to be held within the Department of Computer Science. The Fellowship will be under the supervision of Professor Samson Abramsky FRS in the

Department of Computer Science, and Dr. Simon Benjamin in the Department of Materials Science.

The objectives of the Fellowship will be to create a general framework within which one can classify and study non-classical phenomena such as entanglement and multipartite coherent states. The theoretical techniques used will be founded on work already done in CS, while the practical application of these techniques to characterize degree of non-classicality in real-world structures (both biological and synthetic) will involve expertise in the QuNaT group in Materials. We intend to produce numerical models of increasing complexity, and to work closely with experimental groups, with the ultimate aim of confirming or refuting the presence of non-classical effects in specific biological systems.

Responsibilities/duties

- Preparation of research papers for publication in the scientific literature.
- To represent the research at workshops and conferences.
- Participation in regular meetings with colleagues at University of Oxford.
- Assistance in the supervision of post-graduate students working on related projects.
- The postholder will have the opportunity to teach. This may include lecturing, small-group teaching, and tutoring of undergraduates and graduate students.
- The postholder will carry out any other duties as are within the scope, spirit and purpose of the job as requested by their line manager or the Principal Investigators.

Selection criteria

Essential

- A doctoral degree (or close to finishing one) in computer science, physics, mathematics, or a closely related discipline;
- Good verbal and written communication skills in English;
- A proven background in quantum physics, preferably with relevance to quantum foundations or quantum information science;
- Publications in leading journals and/or conferences.

Desirable:

- Experience in coding and developing software tools;
- A track record of performing autonomous research;
- Knowledge of logical, categorical and sheaf-theoretic methods and their application to quantum mechanics;
- Experience with analytic or numerical modelling of open quantum systems;

- Knowledge of non-Markovian scenarios where information flows back from the environment to the system.

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 funded by and is available initially for up to 2 years, with the possibility of an extension. The post has a salary on the University grade 07S scale (currently £29,541 to £36,298). This includes membership of the University 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 Friday 8th March 2013.

Candidates must also ask their referees to consider this job description and email their reference directly to **job06@cs.ox.ac.uk** or, alternatively, post or fax it to: The Administrator, Department of Computer Science, Wolfson Building, Parks Road, Oxford OX1 3QD, such that the reference arrives by, or shortly after, the advertised closing date.

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.


BRONZE
Athena SWAN
Charter for Women in Science