



Job description and selection criteria

Job title	Two Full Time Research Assistants
Division	MPLS
Department	Computer Science
Location	Wolfson Building, Parks Road, Oxford.
Grade and salary	Grade 7: Salary £29,099-£35,788
Hours	37.5
Contract type	Fixed term contract for up to 1 year
Reporting to	Professor Samson Abramsky/ Professor Bob Coecke
Vacancy reference	TBC

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 2009/10 was £879.8m. Oxford is one of Europe's most innovative and entrepreneurial universities: income from external research contracts exceeds £367m p.a., and more than 60 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 [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	Mathematical foundations of information flow, and applications to quantum foundations and quantum information, including the development of software tools for automated reasoning.
Principal Investigator / supervisor	Professor Samson Abramsky and Professor Bob Coecke
Project web site	http://www.cs.ox.ac.uk/activities/quantum/
Funding partner	The funds supporting this research project are provided by EPSRC and the US Office of Naval Research.

Overview of the role

The Quantum Group at the Department of Computer Science has a multidisciplinary research activity including the areas of quantum foundations and quantum computation, category theory, computer science logic and AI including computational linguistics. It has well over 30 members with a variety of backgrounds. It is led by Samson Abramsky and Bob Coecke. The applicants are expected to contribute to one of the ongoing research strands within the group. One of the successful candidates is expected to contribute to the development of quantum reasoning software, and its exploitation in quantum foundations and quantum information.

Responsibilities/duties

- To undertake research in the areas described above.
- 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 carry out any other duties as are within the scope, spirit and purpose of the job as requested by their Principal Investigators.

Selection criteria for candidate 1

Essential

Applicants should have (or expect shortly to obtain)

- a doctoral degree in computer science, mathematics, physics or related discipline;
- good knowledge of one of the areas of activity within the quantum group;
- a proven track record in one or more of the following areas: semantics of computation, computer science logic, logics of interaction and information flow, epistemic game theory, decision theory and social choice, category theory, quantum foundations, quantum information and computation.
- good scientific writing ability;
- strong publications in areas relevant to this project;
- good communication skills in English, and ability to work within a large group.

Desirable

Applicants will be preferred who are knowledgeable in one or more of the following areas:

- category theory;
- quantum foundations and/or quantum information;
- computer science logic;
- epistemic game theory, decision theory and social choice;

Selection criteria for candidate 2

Essential

Applicants should have (or expect shortly to obtain)

- a doctoral degree in computer science, mathematics, physics or related discipline;
- good knowledge and a proven track record in quantum foundations and/or quantum computation, category theory, computer science logic and in particular in automation;
- excellent programming skills, in languages relevant for the quantum software;
- good scientific writing ability;
- strong publications in areas relevant to this project;
- good communication skills in English, and ability to work within a large group.

Desirable

Applicants will be preferred who are knowledgeable in the following areas:

- experience in the development of quantum reasoning software, and its exploitation in quantum foundations and quantum information;

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 posts, which are full time, one year appointments, have salaries on the University grade 07S scale (currently £29,099 to £35,788), 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).

Method of Application

Applications should be in the form of a letter of application (clearly stating the post title) setting out how the candidate meets the selection criteria, and supported by a full curriculum vitae, together with the names and addresses of two referees. **Candidates should state clearly which post they are applying for.**

These should preferably be sent by email (most formats accepted) to:

[**Job18@cs.ox.ac.uk**](mailto:Job18@cs.ox.ac.uk)

or alternatively, posted to: The Administrator, Oxford University Computing Laboratory, Wolfson Building, Parks Road, Oxford OX1 3QD.

Applications should be sent in time to arrive by the closing date of **12noon on Monday 12th September 2011**. Applications received after this time may not be considered.

Candidates must also ask their referees to consider these further particulars and email their reference directly to [**job18@cs.ox.ac.uk**](mailto:job18@cs.ox.ac.uk) or, alternatively, post or fax it to the above address (fax (+44 1865 283532) such that the reference arrives by, or shortly after, the closing date.

The policy and practice of the University of Oxford require that all staff are offered 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 his or her age, sex, marital or civil partnership status, sexual orientation, religion or belief, racial group or disability.

Applicants who would need a work visa if appointed to the post are asked to note that under the UK's new points-based migration system they will need to demonstrate that they have sufficient points, and in particular that:

- (i) they have sufficient English language skills (evidenced by having passed a test in basic English, or coming from a majority English-speaking country, or having taken a degree taught in English)**

and

- (ii) that they have sufficient funds to maintain themselves and any dependants until they receive their first salary payment.**

Further information is available at:

<http://www.ukba.homeoffice.gov.uk/workingintheuk/tier2/generalarrangements/eligibility/>

All data supplied by applicants will be used only for the purposes of determining their suitability for the post and will be held in accordance with the principles of the Data Protection Act 1998 and the University's Data Protection Policy, but if the person appointed to the post is a migrant sponsored under the UK's new points-based migration system, we are required to retain all applications for the duration of the sponsorship.