



University of Oxford Department of Computer Science

Job description and selection criteria

Job title	Postdoctoral Research Assistant
Division	MPLS
Department	Computer Science
Location	Wolfson Building, Parks Road, Oxford.
Grade and salary	Grade 7: Salary £29,249 - £35,938 p.a.
Hours	Full Time
Contract type	Fixed Term Contract up to 18 months (with the possibility of an extension to 24 months)
Reporting to	Dr Jonathan Barrett

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, Department of Computer Science, 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	Time and the Structure of Quantum Theory and Device-independent Quantum Information Processing
Principal Investigator / supervisor	Dr Jonathan Barrett
Funding partner	FQXI and EPSRC

The Department of Computer Science of University of Oxford seeks a postdoctoral researcher; for 18 months (with the possibility of an extension to 24 months), to work on the projects “Time and the structure of quantum theory” (FQXI) and “Device independent quantum information processing” (EPSRC) with Dr Jonathan Barrett.

Summary:

The position is funded by the ERA-Net CHIST-ERA project *Device-independent quantum information processing*, and by the FQXI project *Time and the structure of quantum theory*. The research assistant will work alongside Dr Barrett on both projects simultaneously. The first will investigate the theory of quantum information processing using unknown or untrustworthy devices. The aim is to develop protocols for quantum cryptography, randomness generation, and other tasks, and to investigate the fundamental resource of quantum nonlocality. The second project will develop a better understanding of the role time

plays in the formalism of quantum theory, and whether physical principles involving time can help to characterize the kinds of information processing that are physically possible.

Main Duties and Responsibilities

The main duties of the successful candidate will include:

- Perform original interdisciplinary research at the interface of quantum information science and the foundations of quantum theory.
- Develop research questions within a specific context, and conduct individual research.
- Present results at international conferences.
- Publish results in leading journals.
- Help organize seminars and workshops.

Selection Criteria

Essential:

- A doctoral degree (either completed or close to completion) in computer science, physics, mathematics, or a closely related discipline.
- Research experience in the foundations of quantum theory, or quantum information science, or both.
- Publications in leading journals.
- Good verbal and written communication skills in English.
- Willingness and ability to collaborate, as well as ability to work independently.
- Willingness to travel internationally.

Desirable:

- A track record advising the research of Masters students.
- Research experience in quantum cryptography.

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 is available on a fixed term contract basis up to 18 months (with the possibility of an extension to 24 months), has a salary on the University grade 07 scale (currently £29,249 - £35,938 p.a.) and includes membership of the University Superannuation Scheme (USS) and have 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 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.

Candidates must also ask their referees to consider this job description and email their reference directly to [**job04@cs.ox.ac.uk**](mailto:job04@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. You will also be asked to provide reference details as part of the online application process and will be asked to indicate whether you are happy for us to contact your referees directly should they not provide a reference by the stated 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.