



University of Oxford Department of Computer Science

Job description and selection criteria

Job title	Post-doctoral 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 35 months
Reporting to	Professor Marta Kwiatkowska

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	VERIWARE: From software verification to everywhere verification
Principal Investigator / supervisor	Professor Marta Kwiatkowska
Funding partner	ERC

A Grade 7 postdoctoral research assistant post is available to work on quantitative software verification under the direction of Professor Marta Kwiatkowska in the Department of Computer Science, University of Oxford. The post is in association with the ERC Advanced Investigator Grant “VERIWARE: From software verification to everywhere verification”. The goal of this project is the development of theoretical foundations and automated verification techniques for ‘everyware’, i.e. sensor-based ubiquitous computing devices, with main focus on developing theoretical foundations, algorithms, implementation techniques and prototype software tools. A broad range of topics is covered, including the following: models for ubiquitous computing devices; abstraction, refinement and synthesis techniques; quantitative/probabilistic verification; online verification techniques, e.g. those based on machine learning or statistical inference; and applications.

The VERIWARE team is led by Professor Kwiatkowska and includes three postdoctoral researchers, two doctoral students and two associate members, in addition to the postdoctoral researcher advertised here. This position has become available because Dr David Parker will shortly take up a lectureship at the University of Birmingham. He will continue as an associate member of VERIWARE. The position advertised here includes both theoretical research as well as practical software development. The successful candidate will

work with Professor Kwiatkowska, Dr Parker and the VERIWARE team towards achieving the goals of the project.

The postholder will be a member of the Verification theme. More information about the project and the Verification theme can be found at:

<http://www.cs.ox.ac.uk/projects/VERIWARE/index.html>

<http://www.cs.ox.ac.uk/research/verification/>

The main duties are described below. The exact scope of the research will depend on the skills of the candidate appointed who will be expected to fulfil the selection criteria defined below.

Main Duties and Responsibilities

The roles will require the postholder to undertake innovative research as defined by the project proposal and to work with colleagues to progress the objectives of the project as part of VERIWARE project team.

The duties and responsibilities are as follows:

- To provide leadership in the relevant research aspects of the project, developing research questions, generating original ideas and conducting individual research.
- To initiate publication of research results in top ranking journals and present research results at leading conferences;
- To assist with the execution of the VERIWARE research plan and management of the VERIWARE team.
- To contribute to software development, including tool releases, case studies and benchmarks, leading the Oxford component of PRISM and VERIWARE in conjunction with Dr David Parker.
- To support the research of junior researchers by providing technical assistance and advice on methodology, as required.
- To manage the project and group's websites, including publication, case studies, tutorial, and other material, as required.
- To assist with project reports and contribute to new research funding applications, as necessary.
- To contribute to teaching, software demos, and other activities described in the project proposal.

Selection Criteria

Applicants should have

- a doctoral degree in computer science, mathematics, or related discipline;
- excellent knowledge of theoretical computer science, model checking and probabilistic verification;
- proven ability and willingness to participate in the development of experimental software;
- excellent scientific writing ability;

- track record of publications in areas relevant to this project;
- excellent communication skills in English;
- ability and willingness to mentor or supervise doctoral students;
- at least 2-3 years of postdoctoral experience, including contribution to software tool development.

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

This post is a full time appointment, and is available immediately for up to 35 months. The post has a salary on the University grade 07 scale, currently £29,249 - £35,938 p.a.

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.

Candidates must also ask their referees to consider this job description and email their reference directly to 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.

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.