



University of Oxford Department of Computer Science

## Job description and selection criteria

<b>Job title</b>	Post-doctoral Research Assistant
<b>Division</b>	MPLS
<b>Department</b>	Computer Science
<b>Location</b>	Wolfson Building, Parks Road, Oxford.
<b>Grade and salary</b>	Grade 7: Salary £29,249 - £35,938 p.a.
<b>Hours</b>	Full Time
<b>Contract type</b>	Fixed Term Contract up to 16 months
<b>Reporting to</b>	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](http://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

<b>Research topic</b>	Autonomous Ubiquitous Sensing, part of Institute for the Future of Computing at the Oxford Martin School
<b>Principal Investigator / supervisor</b>	Professor Marta Kwiatkowska
<b>Funding partner</b>	ERC

A Grade 7 postdoctoral research assistant post is available to work on application and experimental evaluation of quantitative verification to sensor-enabled systems under the direction of Professor Marta Kwiatkowska in the Department of Computer Science, University of Oxford. The post is in association with the Autonomous Ubiquitous Sensing project, part of Institute for the Future of Computing at the Oxford Martin School, and is aligned with the research of the ERC Advanced Investigator Grant “VERIWARE: From software verification to everywhere verification”. The goal of this project is to evaluate the techniques being developed within VERIWARE by applying them to case studies of sensor-enabled embedded systems.

Applicants should have (or shortly expect to receive) a PhD in Computer Science or a closely related field and should have a track record of applying verification tools and techniques. They should have excellent knowledge of model checking, quantitative verification and sensor-enabled embedded systems; a track record of publications in areas relevant to this project; and proven ability and willingness to contribute to the development of case studies and experimental software.

The successful candidate will be expected to contribute both to applications as well as practical software development. He/she will provide leadership for the relevant research aspects of the project, collaborating with the VERIWARE team who are developing relevant theory and quantitative verification tools.

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

<http://gav.cs.ox.ac.uk/projects/sensing/>

<http://www.veriware.org/>

<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.

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 Autonomous Ubiquitous Sensing research plan.
- To develop case studies of sensor-enabled embedded systems.
- To experimentally evaluate the software developed by VERIWARE through case studies and document the results.
- To contribute to software development as required.
- To support the research of junior researchers by providing technical assistance and advice on methodology, as required.
- To manage the project website, including publications, case studies, documentation, 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 (or shortly expect to have):

- a doctoral degree in computer science, mathematics, or related discipline;
- excellent knowledge of model checking and quantitative verification;
- excellent knowledge of sensor networks and embedded systems;

- proven ability and willingness to participate in the development of case studies and experimental software;
- excellent scientific writing ability;
- track record of publications in areas relevant to this project;
- excellent communication skills in English;
- the ability and willingness to mentor or supervise doctoral students.

## 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/](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 16 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 [job05@cs.ox.ac.uk](mailto:job05@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](mailto: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](http://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.