



University of Oxford Department of Computer Science

Job description and selection criteria

Job title	Research Assistant (Two Posts)
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 for up to 5 years
Reporting to	Professor Michael Wooldrige

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	Reasoning about Computational Economies
Principal Investigator / supervisor	Professor Michael Wooldridge
Funding partner	ERC

Two Research Assistant positions are available to work on investigating the formal and automated analysis of computer programs in the presence of self-interested behaviour (it is anticipated that game theoretic techniques will be used for this purpose), under the direction of Professor Michael Wooldridge, who will join the University of Oxford as a Professor of Computer Science on 1 June 2012. The positions are each tenable for a 5 year period from 1 June 2012 and is attached to a newly funded European Research Council (ERC) Advanced Grant obtained by Prof. Michael Wooldridge.

The project is entitled "Reasoning about Computational Economies" (RACE), and will involve carrying out work at the intersection of game theory, complexity, logic, and verification as well as investigating the formal and automated analysis of computer programs in the presence of self-interested behaviour. It is anticipated that game theoretic techniques will be used for this purpose. The overall aim of the project is to develop the theory and tools required to understand how computer programs behave in the presence of self-interested behaviour. Professor Wooldridge will be employed full-time on the project and will supervise both Research Assistants.

Ideally, the associated research posts will be in broadly the following areas:

- Post 1 – game theory and logic/model checking
- Post 2 – game theory and complexity

The main duties are described below. The specific assignment of responsibilities and areas of interest will be dependent on the actual appointments made, and we strongly encourage applications from researchers whose skills and interests broadly match those of the project.

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 undertake the programme of work described in the grant application, under the general supervision of the supervisor.
- To work with other members of staff and research assistants or students as agreed with the supervisor.
- To attend regular meetings held with the supervisor or other designated member of staff, and with other collaborators on the project.
- To produce regular reports and research publications. The presentation of this work is likely to involve occasional travel to conferences and workshops.
- To complete the programme of work within the specified grant period, as required.

Other duties

- Attend courses and conferences when required.
- Take part in career development activities as appropriate.
- Assist in a small way with teaching or other duties in the Department, as appropriate, and as permitted by the conditions of the Grant.
- Obey all University safety and security rules.
- Comply with University and Departmental policies, for example; in the area of computer usage.

Selection Criteria – Post 1 (Game Theory and Logic/Model Checking)

The researcher in this post will develop and explore logics for reasoning about game-like distributed systems, and will contribute to the design of an ideally implementation of model checking tools for the automated analysis of computer programs in the presence of self-interested strategic behaviour.

Essential

- A doctoral degree in multi-agent systems or game theory or logic/model checking or a closely related topic.
- Research publications in game theory or logic/model checking or closely related topics
- The ability to work as part of a team
- The ability to communicate technical research results in presentations and similar.

Desirable

- The ability to program in Java/C or similar language.

Selection Criteria – Post 2 (Game Theory/Complexity)

The researcher in this post will explore the computational complexity of reasoning-about game-like distributed systems.

Essential

- A doctoral degree in multi-agent systems or game theory or computational complexity or a closely related topic.
- Research publications in game theory or complexity or closely related topics.
- The ability to work as part of a team.
- The ability to communicate technical research results in presentations and similar.

Desirable

- Ability to program in Java/C or similar language

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

These posts are full time appointments, available from 1st June 2012, for up to 5 years. The posts both have 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.

Interviews are expected to take place in early May 2012.

Candidates must also ask their referees to consider this job description and email their reference directly to [**job08@cs.ox.ac.uk**](mailto:job08@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.