



University of Oxford Department of Computer Science

Job description and selection criteria

Job title	Research Assistant
Division	MPLS
Department	Computer Science
Location	Wolfson Building, Parks Road, Oxford.
Grade and salary	Grade 7: £29,249 - £35,938.
Hours	Full Time
Contract type	Fixed Term Contract up to 3 years (with the possibility of extension)
Reporting to	Professor Daniel Kroening

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	New Foundations for Engineering Verified Multi-UAV's
Principal Investigator / supervisor	Professor Daniel Kroening
Funding partner	EPSRC

The Department of Computer Science of University of Oxford seeks a postdoctoral researcher to work on a 3-year EPSRC project entitled

`New Foundational Structures for Engineering Multi-UAV Protocols'.

This interdisciplinary project aims to verify autonomous Unmanned Aerial Vehicles (UAV's) that not only navigate, but also communicate with each other. The project aims to span the full verification lifecycle: from high-level logical specifications, to oracle-based test-set reasoning through a bounded model checker, to low-level code on our four Pelican UAVs.

The position requires a researcher with a proven track record of high-quality research in logic and its applications -- of particular relevance are formalisms such as

- Modal and Epistemic Logics
- Dynamic Program Logics
- Probabilistic and Fuzzy logics

Preference will be given to researchers with experience in

Modelling and reasoning about epistemic properties of protocols of communicative Multi-Agent Systems.

The researcher will work closely with Dr Mehrnoosh Sadrzadeh, Prof Michael Wooldridge, and will also be expected to interact with Prof Daniel Kroening and his team working on the UAV and verification aspects of the project in order to derive requirements and case studies.

Main Duties and Responsibilities

The main duties of the successful candidate will include

- Perform original interdisciplinary research at the interface of Verification and Foundations groups
- Direct MSc-level graduate students on related projects.
- Present results at international conferences and grant review meetings;
- Write publications at the standard of the internationally leading venues;
- Develop and implement new research methodologies and materials;
- Develop research questions within a specific context, conduct individual research, analysing detailed and complex qualitative and/or quantitative data from a variety of sources, and generate original ideas by building on existing concepts;
- Share responsibility for shaping the research group's plans and the writing of group-funding applications for new research projects.

Selection Criteria

Essential

- A doctoral degree in computer science or a closely related discipline;
- A substantial track record of high-quality publications in internationally leading venues in an area related to automated formal verification (such as LiCS, ICALP, FOSSACS, CSL, AAMAS, TARK, AiML, CAV, TACAS, POPL, PLDI);
- Possess sufficient specialist knowledge in the discipline to develop research projects and methodologies.
- Good verbal and written communication skills in English

Desirable:

- Experience of working with theoretical logical systems and their applications
- Experience of modelling and reasoning about protocols of multi agent systems
- Experience of applying formal analysis tools in an industrial context;
- A track record advising the research of Masters students;
- A track record of writing successful applications for research funding;
- Documented experience of independent lecturing.

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 initially for 3 years (with the possibility of extension). The post has a salary on the University grade 07S currently £29,249 - £35,938. This will include 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).

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 job17@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.