



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 p.a.
Hours	Full Time
Contract type	Fixed Term Contract up to 24 and 48 months
Reporting to	Professor Ian Horrocks and Dr Bernardo Cuenca Grau

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	Knowledge, Representation and Reasoning
Principal Investigator / supervisor	Professor Ian Horrocks
Funding partner	EPSRC and FP7

The Department of Computer Science has several vacancies for postdoctoral research assistants to work in the area of logic based knowledge representation and reasoning. The posts are funded by the UK Engineering and Physical Sciences Research Council (EPSRC) as part of the Score! project, and by the EU Seventh Framework Programme (FP7) as part of the Optique project. The posts are available from late summer/autumn, and will be of between two and four years duration.

Both projects concern developing ontology based information systems capable of meeting the requirements of realistic applications, and in particular of supporting query answering over very large data sets. Ontologies are formal vocabularies of terms, often shared by a community of users; they are strongly related to description logics (DLs), which provide the formal basis for many ontology languages, most notably the W3C standardised OWL and OWL 2 Ontology Languages. OWL (2) is now the basis for almost all ontology and ontology tool development. One of the key benefits of OWL is that its basis in DLs provides a clear and unambiguous semantics, enables precise characterisation of the tradeoffs between expressivity and computational complexity, and is a source of algorithmic techniques used in ontology reasoning systems.

The development and application of ontologies crucially depend on reasoning. Ontology classification, i.e., organising classes into a specialisation/generalisation hierarchy, is a reasoning task that plays a major role during ontology development: it provides for the detection of potential modelling errors such as inconsistent class descriptions and missing sub-class relationships. Query answering is important in applications that use ontologies as expressive conceptual models providing “intelligent access” to large and complex data sets.

The main focus of the Optique project is to develop Ontology Based Data Access techniques, where lightweight ontologies are used to access data stored in databases, and to investigate their ability to support applications that need to query terabyte sized data sets. The main focus of the Score! The project is to develop scalable query answering techniques for applications where more complex ontologies are required.

The successful applicant will join an internationally leading and rapidly growing research group, with research interests ranging from the logical foundations of information systems through to their implementation and deployment in large scale applications. For more information see:

<http://www.cs.ox.ac.uk/isg/krr/>

Main Duties and Responsibilities

- To undertake research in the areas described above.
- Preparation of research papers for publication in the scientific literature.
- To represent the research at workshops and conferences.
- Participation in regular meetings with colleagues at University of Oxford.
- Assistance in the supervision of post-graduate students working on related projects.
- The postholder will carry out any other duties as are within the scope, spirit and purpose of the job as requested by their Principal Investigators.

Selection Criteria

Essential

- A first degree in Computer Science or related discipline.
- Applicants should have, or be about to obtain, a PhD in computer science or a related discipline and/or have some relevant postgraduate experience
- Interests or capabilities in logics, automated reasoning or database theory.
- Ability to give technical presentations and prepare reports/papers for publication.
- A willingness to collaborate with others and work effectively as a member of a team.

Desirable

- Experience in knowledge representation and reasoning.
- Experience in ontologies and ontology languages.
- Programming experience, preferably in Java or C++.
- Experience in the implementation of algorithms for automated reasoning.

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 posts are full time appointments and are available initially for between 24 and 48 months. The posts have a salaries on the University grade 07S currently £29,249 - £35,938, include 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 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 job21@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.