University of Oxford Department of Computer Science

Job description and selection criteria

Job title	Research Associate – NQIT Responsible Research and Innovation
Division	MPLS
Department	Computer Science
Location	Wolfson Building, Parks Road, Oxford.
Grade and salary	Grade 7; Salary: £30,434-£40,847
Contract type	2 year fixed term contract (with possibility of extension)
Hours	Full Time

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 2010/11 was £919.6m. Oxford is one of Europe's most innovative and entrepreneurial universities: income from external research contracts exceeds £376m p.a., and more than 70 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, Computing Laboratory, 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	NQIT Responsible Research and Innovation
Principal Investigator / supervisor	Professor Marina Jirotka

Overview of the role

In the light of the potential of quantum computing to transform the ways in which computation is currently conducted, and the impact this will have across multiple research and technology sectors, this project is dedicated to ensuring that the process and outcomes of NQIT innovations are socially desirable and acceptable. To enable this, we turn to recent research in Responsible Research and Innovation (RRI) that aims to bring together various stakeholders in activities designed to ensure positive outcomes of research and innovation.

RRI has been defined as a “transparent, interactive process by which societal actors and innovators become mutually responsive to each other with a view on the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products (in order to allow a proper embedding of scientific and technological advances in our society” Von Schomberg, 2011). To achieve this, NQIT will engage with the possible consequences of the research and innovation through foresight and assessment processes. This will involve active engagement with various stakeholders, not only with researchers, industry and research funders but also, importantly, with civil society and policy makers. Stakeholders should be involved in all aspects of responsible research and innovation. This includes early upstream engagement as well as midstream and downstream activities that may then draw on a large range of possible activities.

The societal and ethical issues arising from Quantum Computing are as yet largely under-explored. The approach taken here is that these issues are a matter of discovery that will unfold as the project proceeds and will emerge through deliberation and debate with a

variety of stakeholders at key milestones in the project. This approach will allow those involved in the development of the demonstrator and the quantum technologies to reflect on their innovations and draw on the issues identified as *a source of creativity* to feed into and enhance their innovations overall. The RRI stream will develop an online community resource that will be populated by project and community members throughout the lifetime of the hub. It will contain case studies, descriptions of technologies, possible solutions to ethical dilemmas; RRI methodologies, share lessons learned and more. It aims to bring together the community of Quantum researchers and innovators interested in undertaking their work responsibly. Beyond the State of The Art we will reflect on our own processes for operationalizing RRI in such an innovative technology, with a focus on the challenges of developing an end-to-end approach – a framework for addressing issues and activities of RRI which takes the *commonality of the technology* as its focus rather than the stage of technology life cycle or organisational or institutional milieu.

The researcher will ideally have an appreciation of both 'soft' and 'hard' skills. They should be technically informed so that they can grasp the science, as well as versed in social science / public engagement methods to investigate the visions benefits and risks of quantum computing and to create the connections with broader stakeholder communities. They must also have the ability to function in the context of large, complex projects.

Responsibilities/duties

- Project based Research
    - To develop a multi-stakeholder engagement strategy to explore NQIT futures and their consequences
    - To develop and evaluate an NQIT community resource and RRI Framework
    - To undertake risk and impact assessment; foresight scenarios; privacy impact assessments and ethical impact assessments.
    - Develop research questions within a specific context and conduct individual research in order to gather and analyse both quantitative and qualitative ethnographic and interview data from a variety of sources, and generate original ideas by building on existing concepts.
    - Adapt existing and develop new research methodologies and materials

- Manage own academic research and administrative activities which will involve:
    - day to day administration of the project
    - organising RRI workshops
    - small scale project management
    - dissemination of results through social media and publications
    - co-ordinating multiple aspects of work to meet deadlines
- Develop ideas for generating research income, and present detailed research proposals to senior researchers
- Collaborate in the preparation of research publications, and book chapters
- Present papers at conferences or public meetings
- Act as a source of information and advice to other members of the group on methodologies or procedures
- Such other project-related duties as may be required by the Principal Investigator
    - The post holder will have the opportunity to teach. This may include lecturing, small-group teaching, and tutoring of undergraduates and graduate students.
    - The post holder will carry out any other duties as are within the scope, spirit and purpose of the job as requested by their line manager or the Principal Investigators.

Selection criteria

Essential

- A PhD in physical sciences, computer science, social science, or relevant discipline
- Expertise in gathering and analysing ethnographic and interview data
- Expertise in interacting with a range of stakeholders both individually and in workshops
- Expertise in facilitating workshops
    - Ability to manage own academic research and associated activities
    - Previous experience of contributing to publications/presentations
    - Ability to contribute ideas for new research projects and research income generation
- Experience of large scale multidisciplinary projects
- Evidence writing papers based on qualitative research.
- A genuine interest in the aims of the research programme
- Ability to work in a team
    - Excellent communication skills, including the ability to write for publication, present research proposals and results, and represent the research group at meetings

Desirable

The following criteria are considered to be *desirable* though not essential:

- A willingness to assist in the preparation of future research proposals
- Experience of ethical issues on technical projects
- Experience of conducting risk and impact assessment; foresight scenarios; privacy impact assessments and ethical impact assessments.

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 post, which is a full-time appointment, has a salary on the University grade 07S scale (currently £30,434 - £37,394) and is available for up to 2 years (with the possibility of extension). This includes membership of the University Superannuation Scheme (USS) and 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 **job07@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.