



University of Oxford Department of Computer Science

Job description and selection criteria

Job title	Research Associate
Division	MPLS
Department	Computer Science
Location	Wolfson Building, Parks Road, Oxford.
Grade and salary	Grade 7: Salary £30,434 – £37,394 p.a.
Hours	Full Time
Contract type	Fixed term for up to 18 months
Vacancy reference	115313

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 22,000.

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 over 6,500 'academic-related' staff (postgraduate research, computing, senior library, and administrative staff) and over 2,700 '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 2012/13 was £1,086.9m. Oxford is one of Europe's most innovative and entrepreneurial universities: income from external research contracts exceeds £436.8m p.a., and more than 80 spin-off companies have been created.

For more information please visit www.ox.ac.uk/staff/about_the_university.html

MPLS Division

The Mathematical, Physical, and Life Sciences Division (MPLS) is one of the four academic divisions of the University.

Oxford is widely recognised as one of the world's leading science universities. In the 2008 UK Research Assessment Exercise over 70% of research activity in MPLS was judged to be world-leading (4*) or internationally excellent (3*), and Oxford was ranked first in the UK across the mathematical sciences as a whole.

The MPLS division's ten departments and three interdisciplinary units span the full spectrum of the mathematical, computational, physical, engineering and life sciences, and undertake both fundamental research and cutting-edge applied work. We have over 6,000 students and research staff, and generate over half of our funding from external research grants. Our research addresses major societal and technological challenges and is increasingly interdisciplinary in nature. We collaborate closely with colleagues in Oxford across the medical sciences, social sciences and humanities, as well as with researchers from around the world.

For more information, please visit:

<http://www.mpls.ox.ac.uk/>

Department of Computer Science

The Department of Computer Science (DoCS) was established in 1957. It is one of the UK's leading Computer Science Departments (ranked first in a number of newspaper rankings, and third in terms of research power). In the RAE in 2008, 80% of the submitted research was found to be in the top two tiers, either 4* (world-leading) or 3* (internationally excellent). Many members of the Department are active in externally sponsored research, with both government and industrial funding. At present there are 52 members of academic staff and over 80 research staff.

DoCS has close links with government, industry, and other departments within the University. Among the latter are Mathematics, Engineering, Physics, Statistics and a number of life sciences departments. It has a major role in the rapidly-developing field of e-Science alongside the Oxford e-Research Centre, an independent unit with which we share a building. This is an essentially inter-disciplinary activity which is at present attracting major funding from a number of sources. At present DoCS holds £37m in external research contracts.

Research in DoCS is currently managed in seven themes. *Software Engineering* (led by Professor Jim Davies), works on a wide variety of areas including e-Science and model-driven development; *Programming Languages* (led by Professor Jeremy Gibbons and including Dr Ralf Hinze and Professor Oege de Moor); Security (leader Professor Bill Roscoe, with Professor Sadie Creese leading a new Cyber Security Centre, and Professor Gavin Lowe); *Verification* (leader Professor Marta Kwiatkowska) covering probabilistic and software model checking (Professor Daniel Kroening) with time and concurrency (Professor Joel Ouaknine, Professor James Worrell, and Professors Roscoe and Lowe), and automated verification of hardware (Professor Tom Melham); *Computational Biology* (led by Professor David Gavaghan and including Professors Kevin Burrage and Helen Byrne) is one of the

world's leading groups building computational models of biological systems and is particularly well known for its work on the heart; and *Foundations, Logic and Structures*, (leader, Professor Samson Abramsky) which includes groups working on quantum information and computation (Abramsky and Professor Bob Coecke), game semantics and verification (Professor Luke Ong) and constraints (Professor Peter Jeavons); *Information Systems* (jointly led by Professors Georg Gottlob and Ian Horrocks and including Professor Stephen Pulman, who works on Computational Linguistics, and Professor Michael Benedikt). In addition the department has recently recruited Professors Mike Wooldridge (Agent Based Systems) and Elias Koutsoupias (Algorithms). A realignment of the themes is expected shortly.

For more information please visit: <http://www.cs.ox.ac.uk/>

Job description

Research topic	Digital Wildfire: (Mis)information flows, propagation and responsible governance
Principal Investigator / supervisor	Professor Marina Jirotko

Overview of the role

The rapid growth of social media platforms such as Twitter has had a significant impact on the way people can connect and communicate instantaneously with others. The content that users put onto social media platforms can 'go viral' in minutes and that content, whether text, images or links to other sites, can have profound effects on events as they unfold. This can be both for the good or the bad. In times of disaster, tweeting about events can call people to help from around the globe. But people can also spread dubious and dangerous information, hate speech and rumours, via social media. This type of behaviour has been called "digital wildfires". A World Economic Forum report indicates two situations in which digital wildfires are most dangerous: in situations of high tension, when false information or inaccurately presented imagery can cause damage before it is possible to correct it. The real-world equivalent is shouting "fire!" in a crowded theatre - even if it takes a moment for realisation to spread that there is no fire, in that time people may already have been crushed to death in the scramble for the exit. Another dangerous situation is when widely circulated information leads to 'groupthink' which may be resistant to attempts to correct it. These digital wildfires can seriously challenge the capacity of traditional media, civil society and government to report accurately and respond to events as they unfold. But how people communicate in these digital social spaces is not well understood; users may not fully understand how these spaces 'work' as channels of communication and so what constitutes appropriate and responsible behaviour may be unclear. The challenge then is to develop appropriate ways of governing these spaces and how to apply and use them responsibly. This project will attempt to address this challenge by framing the study in a programme of work known as Responsible Innovation in ICT and by developing a methodology for the study and advancement of the responsible governance of social media. A key question is to what extent do people in these spaces 'self-regulate' their behaviour? If this is evident then there is a case for exploring how self-correction mechanisms may be amplified so that false rumours are identified more quickly. The legitimacy of new governance mechanisms may be enhanced if they respect and build on such existing self-governance techniques.

Drawing on a range of methods we will examine how social media are used, how people consume information they find there and what roles they play in its production; how (mis)information flows as they spread in real-time. We will draw on a selection of case studies of rumour and hate speech sourced from our recent and on-going research in social media. From the analyses we will produce a digital tool to detect and visualise rumour, misinformation and antagonistic content and how this relates to self-regulative behaviour such as counter speech, dispelling of rumours and verification practices, so that people are able to make better-informed decisions on how to manage emerging situations in response to real-world events. We will also conduct fieldwork at various sites (police, social media platforms, Google, civil rights organisations, news media) to investigate how stakeholders respond to challenges presented by events where misinformation, rumour and antagonistic content via social media may be a concern, for example, during sporting events, civil disturbance and electoral campaigns. From our analyses the project will develop an ethical security map for the practices of governing the use of social media. We will complement this ethical security map with a range of outputs for broader impact such as, engaging with secondary schools, where we will develop a reflection and training module on digital wildfire for young people - one of the largest age groups actively using social media and also a relatively vulnerable social group.

The project is a collaboration between the Universities of Oxford, Cardiff, Warwick and De Montfort. The project will be led in Oxford by Marina Jirotko who is Professor of Human Centred Computing in the Department of Computer Science, Associate Director of the Oxford e-Research Centre, and Associate Researcher of the Oxford Internet Institute.

The researcher will have experience of facilitating meetings and focus groups and be sufficiently experienced to interact with senior researchers and executives of organizations. This RA will also be required to coordinate the workshop activities of the project and participate in the management of case studies and field trials.

Responsibilities/duties

- Project based Research
 - To design, co-ordinate and organize the four Delphi panels; each with three iterations to be held and supported online.
 - To develop and evaluate an ethical security map
 - To disseminate findings in secondary schools
- Project based administration:
 - Day-to-day administration of the project
 - Organising project workshops
 - Dissemination of results through social media and publications
- Such other project-related duties as may be required by the Principal Investigator
- The postholder 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, or shortly be expecting to receive one, in computer science, social science, or relevant discipline
- Expertise in gathering and analyzing both interview data and in the digital interaction analysis of data sets to inform the development and assessment of the ethical security map.
- Expertise in interacting with a range of stakeholders both individually and in workshops
- Expertise in facilitating workshops
- Evidence writing papers based on qualitative research.
- A genuine interest in the aims of the research programme
- Ability to work in a team
- Good verbal and written communication skills in English

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 large scale multidisciplinary projects

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, is funded by ESRC and is available for up to 18 months, has a salary on the University grade 07S scale (currently £30,434 - £37,394 p.a.). This includes 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 job15@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. You will also be asked to provide reference details as part of the online application process and will be asked to indicate whether you are happy for us to contact your referees directly should they not provide a reference by the stated 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.