University of Oxford Department of Computer Science

Job description and selection criteria

Job title	Senior Research Fellow in Information Visualisation for the Biological Sciences
Division	MPLS
Department	Computer Science
Location	Wolfson Building, Parks Road, Oxford.
Grade and salary	Grade 08S scale (£37,012-£44,166) or Grade 07S scale (£29,249-£35,938), depending on experience
Contract type	Fixed term contract for up to 3 years (with the possibility of extension for a further 1 years)
Reporting to	Professor David Gavaghan

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	Scientific Visualisation
Principal Investigator / supervisor	Professor David Gavaghan
Funding partner	EPSRC and Microsoft Research Cambridge

Overview

The University of Oxford, University College London and Microsoft Research, Cambridge have recently received funding from the EPSRC Cross-Disciplinary Interfaces Programme (C-DIP) for a programme of research that will involve up to 17 post-doctoral fellowships over a five year period. The 2020 Science programme is focused on fostering the creation of a new generation of future scientific leaders – new kinds of scientists with the ability to lead the way in tackling fundamental challenges in science in areas of societal importance. At the heart of the programme is the development and application of computational tools and novel approaches to the scientific computing, scientific software development and software engineering that underpin the development of predictive models of complex, multi-scale natural systems. Further details about the research programme and its scientific remit can be found at www.2020science.net

Responsibilities/Duties

The Senior Research Fellow will oversee the creation and management of novel 3D visualisation solutions across the 2020 Science research programme, at both a group and individual project level. Projects will be based across three principle sites, University of Oxford, UCL and Microsoft Research, Cambridge, and as such the Senior Research Fellow will be expected to travel to these sites as needed. They will also be expected to design and implement a visualisation strategy across the 2020 Science research programme to determine where visualisation solutions would be most appropriate as well as the form they might take.

The scientists across the programme will variously deal with visualisation issues relating to (i) large data sets, (ii) complex data sets and (iii) complex model outputs for spatially and temporally varying systems, and (iv) graphical representation of models. The post holder will work closely with other scientists and software developers in developing software platforms that progress scientific discovery in the programme overall. The post offers a unique opportunity to research and apply computational visualisation solutions for novel communication challenges at the interface of emerging scientific disciplines. We will consider diverse technical backgrounds, from designers with technical ability, to scientists and computer scientists who have demonstrably strong design and information communication abilities. We are especially interested in applications from those working at the interface of design and computation.

Key responsibilities:

- Oversee the creation and development of novel 3D visualisation solutions from scratch that will enhance and communicate more clearly the scientific research and software development taking place with the 2020 Science programme at the University of Oxford, UCL and Microsoft Research, Cambridge.

- Work effectively with the other scientists and software engineers in the programme to assess and implement engineering-design solutions for individual projects as well as identifying possible cross project platforms/languages that solve common visualisation requirements.

- Post holder must quickly understand and capture the visualisation requirements of a diverse set of projects (research spans molecular and cellular to global scales) and a variety of users.

- Develop a visualisation strategy to be adopted across the programme. The strategy should provide a general structure for undertaking such work, as well as highlighting the resources needed going forward to implement such a strategy.

- Oversee all visualisation activities across the 2020 Science programme. This will include defining all visualisation projects across all 3 sites and the team members involved, setting out a structure and timeline for project completion, and managing the overall visualisation project portfolio to ensure they are completed on time/to budget.

- Act as a line manager for any additional research fellows recruited to the programme in the area of visualisation

- Represent the 2020 Science research group at external meetings/seminars

- Present papers/visualisation solutions at national and international conferences, and lead seminars/training courses to disseminate research findings and advances in visualisation

- Raise research funds through grant applications and industry connections to expand visualisation team and/or manage larger research team and budget

The postholder will carry out research as a member of the University of Oxford, based in one of the Departments associated with the programme (Department of Computer Science, Statistics, Physics, Biochemistry, Engineering Science or the Mathematical Institute) and as such be responsible to the Principal Investigators of the 2020 Science Programme. This appointment will be joint between the University of Oxford and Microsoft Research in Cambridge.

Selection Criteria

Essential:

- A PhD in a relevant area (e.g. Information design, Computational Science, Mathematical or Computational Biology, Applied Mathematics, or Computer Science), or a degree in those areas with an excellent portfolio of research in visualisation or information design.
- A documented track record of producing outstanding and novel scientific visualisations, preferably in an interdisciplinary environment
- Strong publication record, if applicable, and knowledge of existing and cutting edge visualisation techniques, languages and platforms.
- Possess sufficient specialist knowledge in the discipline to develop research projects and methodologies
- Excellent communication and interpersonal skills
- Experience of complex projects requiring input and dissemination from a range of users
- Management experience, as evidenced by ability to manage projects and people/teams

Desirable:

- Experience of multidisciplinary research settings;
- Experience of teaching/training
- A track record of successful applications for funding to external grant awarding bodies

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 is available for up to 3 years (with possible 1 year extension), has a salary on the University grade 08S scale (£37,012-£44,166) or grade 07S scale (£29,249-£35,938) depending on experience**, includes membership of the University pension scheme and has an annual leave entitlement of 38 days per year (inclusive of all public holidays and university closed periods).

**The department reserves the right to appoint at Grade 07S if the most suitable applicant needs to gain further experience in part of the work of the post. If appointed at grade 7, the job title for the post will be Research Fellow in Information Visualisation for the Biological Sciences and the post holder will undertake research as defined by the project proposal and to work with the PI and his doctoral students to achieve the objectives of the project. The exact scope of the work will depend

on the skills of the appointee. The appointee should possess a PhD or a degree in a relevant area and should have excellent knowledge of the subject area.

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.

In addition, candidates will be expected to submit a two page research plan detailing their existing research/visualisation work and the research work they would hope to carry out during their fellowship. Ideally, candidates should include links to their portfolio of visualisation work to date within the research plan. Should this not be possible, please contact Jennifer Wilkinson (Jennifer.wilkinson@cs.ox.ac.uk) to arrange an alternate means of submitting such work.

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.

Informal enquiries regarding the vacancy can be made to Professor David Gavaghan (david.gavaghan@cs.ox.ac.uk).

Candidates must also ask their referees to consider this job description and email their reference directly to **job01@cs.ox.ac.uk** or, alternatively, post 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.