<table>
<thead>
<tr>
<th>Job title</th>
<th>Research Engineer</th>
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<tbody>
<tr>
<td>Division</td>
<td>Medical Sciences</td>
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<tr>
<td>Department</td>
<td>Nuffield Department of Medicine, Ludwig Institute for Cancer Research</td>
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<tr>
<td>Location</td>
<td>Old Road Campus Research Building, Headington, Oxford, OX3 7DG</td>
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<tr>
<td>Grade and salary</td>
<td>Grade 7: £32,817 - £40,322 per annum</td>
</tr>
<tr>
<td>Hours</td>
<td>Full time</td>
</tr>
<tr>
<td>Contract type</td>
<td>Fixed-term contract for 12 months in the first instance</td>
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<tr>
<td>Reporting to</td>
<td>Professor Xin Lu</td>
</tr>
<tr>
<td>Vacancy reference</td>
<td>143366</td>
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<tr>
<td>Additional information</td>
<td>We will consider part-time and flexible working arrangements. This position is funded by Ludwig Core Award</td>
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<tr>
<th>Research topic</th>
<th>Developing interactive analysis tools for personalised medicine discovery</th>
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<tbody>
<tr>
<td>Principal Investigator / supervisor</td>
<td>Prof. Xin Lu (Ludwig Institute for Cancer Research)  Dr. Felix Zhou (Ludwig Institute for Cancer Research)</td>
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<tr>
<td>Project team</td>
<td></td>
</tr>
<tr>
<td>Project web site</td>
<td><a href="https://www.ludwig.ox.ac.uk/research/xin-lu-group-page">https://www.ludwig.ox.ac.uk/research/xin-lu-group-page</a> <a href="https://www.ludwig.ox.ac.uk/people/felix-zhou">https://www.ludwig.ox.ac.uk/people/felix-zhou</a></td>
</tr>
<tr>
<td>Funding partner</td>
<td>The funds supporting this research project are provided by the Ludwig Institute for Cancer Researeh</td>
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The role

The post-holder will develop an interactive scientific graphical user interface and workflow to enable experimental biologists to effectively use in-house developed state-of-the-art computational algorithms to interactively interrogate high-content timelapse microscopy imaging datasets. You will work jointly with Prof. Xin Lu, Dr. Felix Zhou and a team of experimental biologists at the Ludwig Institute of Cancer Research. These researchers have recently developed, published (eLife) and patented a computational motion analysis framework, Motion Sensing Superpixels (MOSES) to interrogate high-resolution timelapse imaging datasets and are applying the method to better understand the mechanisms that cause cancer to aid the development of personalised cancer therapies. MOSES is working well but it is not easy for the biologists to use independently. Your job is to work with both the computational and experimental scientists to lead, plan and deliver robust and easy to maintain software solutions that enable the experimental biologists to use MOSES easily, effectively and independently. The post would be ideal for an experienced software developer with a keen interest in deploying computational image analysis and machine learning solutions. The post is for 1 year in the first instance, with the potential to extend if the projects are going well. We are open to candidates interested in working part time or with flexible working hours, although effective communication with both the biology and computational elements of the team will be essential.

Responsibilities

- Work with the computational team to understand, streamline, improve, translate and scale-up existing computational pipelines and data analysis for more general deployment

- Work with the experimental biologists to understand key user requirements

- Effectively liaise with both computational and experimental teams to ensure that the system plan and design meets requirements

- Independently lead, design and implement a robust, easy to use and maintain intuitive GUI that allows the experimental biologists to use the computational tools to analyse their data independently

- Attend and contribute to project group meetings

- Train biologists to work with the software tools and provide post release support and maintenance

- Define, design and create a database for the collected microscopy data to enable easy sorting, downloading and visualization of data through the GUI for analysis. This will require understanding and interfacing with existing image acquisition and storage protocols

- Ensure the developed software operates across a range of operating systems, namely Windows, MacOS and Linux

- Participate in and support the public engagement and widening access activities of the Department and the University. This is anticipated to be not more than 2 days per year.
• Undertake mandatory training as required by the University, Division and Department. The specific list of training courses may change from time-to-time, in response to both legal and internal University requirements.

Pre-employment screening

All offers of employment are made subject to standard pre-employment screening, as applicable to the post.

If you are offered the post, you will be asked to provide proof of your right-to-work, your identity, and we will contact the referees you have nominated. You will also be asked to complete a health declaration (so that you can tell us about any health conditions or disabilities so that we can discuss appropriate adjustments with you), and a declaration of any unspent criminal convictions.

We advise all applicants to read the candidate notes on the University’s pre-employment screening procedures, found at: www.ox.ac.uk/about/jobs/preemploymentscreening/.

Selection criteria

Essential selection criteria

• BSc or MSc in Computer Science, Engineering or related subject
• Experience developing cross-platform GUI applications
• Experience with scientific programming and data science
• Good Python Skills to work with existing code
• Excellent communication skills

Desirable

• Experience developing databases e.g. SQL
• Familiarity with common biological imaging formats (e.g. .tif, .ism) and image analysis tools (e.g. Fiji, Icy)
• Familiarity with Python deep learning frameworks e.g. Tensorflow/PyTorch
• Some familiarity or knowledge of biology

About the University of Oxford

Welcome to the University of Oxford. We aim to lead the world in research and education for the benefit of society both in the UK and globally. Oxford’s researchers engage with academic, commercial and cultural partners across the world to stimulate high-quality research and enable innovation through a broad range of social, policy and economic impacts.

We believe our strengths lie both in empowering individuals and teams to address fundamental questions of global significance, while providing all our staff with a welcoming and inclusive workplace that enables everyone to develop and do their best work. Recognising that diversity
is our strength, vital for innovation and creativity, we aspire to build a truly diverse community
which values and respects every individual's unique contribution.

While we have long traditions of scholarship, we are also forward-looking, creative and cutting-
edge. Oxford is one of Europe's most entrepreneurial universities. Income from external
research contracts in 2016/17 exceeded £564m and we rank first in the UK for university spin-
outs, with more than 130 companies created to date. We are also recognised as leaders in
support for social enterprise.

Join us and you will find a unique, democratic and international community, a great range of
staff benefits and access to a vibrant array of cultural activities in the beautiful city of Oxford.

For more information, please visit www.ox.ac.uk/about/organisation.

Medical Sciences

The Medical Sciences Division is an internationally recognized centre of excellence for
biomedical and clinical research and teaching. We are the largest academic division in the
University of Oxford

World-leading programmes, housed in state-of-the-art facilities, cover the full range of scientific
endeavour from the molecule to the population. With our NHS partners we also foster the
highest possible standards in patient care.

For more information please visit: www.medsci.ox.ac.uk

Nuffield Department of Clinical Medicine (NDM) ...fostering your career in science

The Nuffield Department of Clinical Medicine (NDM) is one of the largest departments of the
University of Oxford and is part of the Medical Sciences Division, with responsibility for a
significant part of the teaching of clinical students within the Medical School.

NDM has significant financial turnover and complexity, resulting from its diverse research
portfolio, its geographical spread and its close links with NHS funding and strategic teams
involved in the development and delivery of increasingly integrated clinical research platforms.
For more information please visit: http://www.ndm.ox.ac.uk/home

The Nuffield Department of Clinical Medicine has been presented with a Departmental Athena
SWAN Silver award in recognition of the commitment made to promote gender equality through
our organisational and cultural practices and our efforts to improve the working environment for
both men and women. For more information please see our Departmental Athena SWAN
pages: www.ndm.ox.ac.uk/working-for-ndm/aboutndmatheneswan/.

The Ludwig Institute for Cancer Research (LICR)

Research within the Ludwig Cancer Research, Oxford Branch is focused on studying signalling
pathways that influence cancer initiation and progression, with a focus on infection,
inflammation and cancer epigenetics. We aim to advance cancer prevention, early diagnosis and
effective treatment.

The research groups at Ludwig Cancer Research, University of Oxford, have strong overlapping
interests yet maintain diversity, enabling the effective sharing of ideas and technologies. By
working together the scientists maximise their research potential.
The Oxford Branch currently employs approximately 120 staff at the Old Road Campus Research Building in Headington, Oxford, and has plans for further expansion over the coming 2-3 years.

For more information please visit: http://www.ludwig.ox.ac.uk/

**How to apply**

Before submitting an application, you may find it helpful to read the ‘Tips on applying for a job at the University of Oxford’ document, at
http://www.ox.ac.uk/about_the_university/jobs/research/
http://www.ox.ac.uk/about_the_university/jobs/professionalandmanagement/
http://www.ox.ac.uk/about_the_university/jobs/supportandtechnical/

If you would like to apply, click on the **Apply Now** button on the ‘Job Details’ page and follow the on-screen instructions to register as a new user or log-in if you have applied previously. Please provide details of two referees and indicate whether we can contact them now.

You will also be asked to upload a CV and a supporting statement. The supporting statement must explain how you meet each of the selection criteria for the post using examples of your skills and experience. This may include experience gained in employment, education, or during career breaks (such as time out to care for dependants).

Your application will be judged solely on the basis of how you demonstrate that you meet the selection criteria stated in the job description.

Please upload all documents as PDF files with your name and the document type in the filename.

All applications must be received by **midday** on the closing date stated in the online advertisement.

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**Information for priority candidates**

A priority candidate is a University employee who is seeking redeployment because they have been advised that they are at risk of redundancy, or on grounds of ill-health/disability. Priority candidates are issued with a redeployment letter by their employing department(s).

If you are a priority candidate, please ensure that you attach your redeployment letter to your application (or email it to the contact address on the advert if the application form used for the vacancy does not allow attachments).

Should you experience any difficulties using the online application system, please email recruitment.support@admin.ox.ac.uk. Further help and support is available from www.ox.ac.uk/about_the_university/jobs/support/. To return to the online application at any stage, please go to: www.recruit.ox.ac.uk.

Please note that you will receive an automated email from our e-recruitment system to confirm receipt of your application. **Please check your spam/junk mail** if you do not receive this email.
Important information for candidates

Data Privacy

Please note that any personal data submitted to the University as part of the job application process will be processed in accordance with the GDPR and related UK data protection legislation. For further information, please see the University’s Privacy Notice for Job Applicants at: www.admin.ox.ac.uk/councilsec/compliance/gdpr/privacynotices/job/. The University’s Policy on Data Protection is available at: www.admin.ox.ac.uk/councilsec/compliance/gdpr/universitypolicyondataprotection/.

The University’s policy on retirement

The University operates an Employer Justified Retirement Age (EJRA) for all academic posts and some academic-related posts. The University has adopted an EJRA of 30 September before the 69th birthday for all academic and academic-related staff in posts at grade 8 and above. The justification for this is explained at: www.admin.ox.ac.uk/personnel/end/retirement/acrelretire8+.

For existing employees, any employment beyond the retirement age is subject to approval through the procedures: www.admin.ox.ac.uk/personnel/end/retirement/acrelretire8+.

There is no normal or fixed age at which staff in posts at grades 1–7 have to retire. Staff at these grades may elect to retire in accordance with the rules of the applicable pension scheme, as may be amended from time to time.

Equality of Opportunity

Entry into employment with the University and progression within employment will be determined only by personal merit and the application of criteria which are related to the duties of each particular post and the relevant salary structure. In all cases, ability to perform the job will be the primary consideration. No applicant or member of staff shall be discriminated against because of age, disability, gender reassignment, marriage or civil partnership, pregnancy or maternity, race, religion or belief, sex, or sexual orientation.
Benefits of working at the University

Employee benefits

University employees enjoy 38 days' paid holiday, generous pension schemes, travel discounts, and a variety of professional development opportunities. Our range of other employee benefits and discounts also includes free entry to the Botanic Gardens and University colleges, and discounts at University museums. See www.admin.ox.ac.uk/personnel/staffinfo/benefits.

University Club and sports facilities

Membership of the University Club is free for all University staff. The University Club offers social, sporting, and hospitality facilities. Staff can also use the University Sports Centre on Iffley Road at discounted rates, including a fitness centre, powerlifting room, and swimming pool. See www.club.ox.ac.uk and www.sport.ox.ac.uk/oxford-university-sports-facilities.

Information for staff new to Oxford

If you are relocating to Oxfordshire from overseas or elsewhere in the UK, the University's Welcome Service website includes practical information about settling in the area, including advice on relocation, accommodation, and local schools. See www.welcome.ox.ac.uk. There is also a visa loan scheme to cover the costs of UK visa applications for staff and their dependents. See www.admin.ox.ac.uk/personnel/permits/reimburse&loanscheme/.

Family-friendly benefits

With one of the most generous family leave schemes in the Higher Education sector, and a range of flexible working options, Oxford aims to be a family-friendly employer. We also subscribe to My Family Care, a service that provides practical advice and support for employees who have caring responsibilities. The service offers a free telephone advice line, and the ability to book emergency back-up care for children, adult dependents and elderly relatives. See www.admin.ox.ac.uk/personnel/staffinfo/benefits/family/mfc/.

Childcare

The University has excellent childcare services, including five University nurseries as well as University-supported places at many other private nurseries. For full details, including how to apply and the costs, see www.admin.ox.ac.uk/childcare/.

Disabled staff

We are committed to supporting members of staff with disabilities or long-term health conditions. For further details, including information about how to make contact, in confidence, with the University's Staff Disability Advisor, see www.admin.ox.ac.uk/eop/disab/staff.

Staff networks

The University has a number of staff networks including the Oxford Research Staff Society, BME staff network, LGBT+ staff network and a disabled staff network. You can find more information at www.admin.ox.ac.uk/eop/inpractice/networks/.

The University of Oxford Newcomers' Club

The University of Oxford Newcomers' Club is an organisation run by volunteers that aims to assist the partners of new staff settle into Oxford, and provides them with an opportunity to meet people and make connections in the local area. See www.newcomers.ox.ac.uk.