



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Quantum Technology for Endoscopic and Surgical Image Analysis, Faculty of Engineering and Physical Sciences



Salary: Grade 7 (£41,064 – £48,822 p.a.) Due to funding restrictions, an appointment will not be made higher than £41,064 p.a.

Reporting to: Dr Sharib Ali

Closing date: Sunday 06 September 2026

Reference: EPSCP1186

Fixed-term (starting from 01 October 2026 until 31 March 2027 - to complete specific time limited work)

Location: Leeds main campus

We are open to discussing flexible working arrangements

Research Fellow in Quantum Technology for Endoscopic and Surgical Image Analysis, School of Computer Science.

Are you an aspiring researcher willing to contribute towards digital transformation of healthcare benefitting patients by making the clinical interventions informed, safer, faster and effective?

Overview of the role

The project is aimed at technical innovations in computational physics and computer vision (sensing, camera calibration, depth estimation, tracking and visualisation) to enable real-time tissue surveillance for endoscopic and surgical planning and decision making. The project will provide an opportunity to collaboratively work with physicists, computer scientists, clinical team and industry exploring novel ways to transform research and practice in screening and surgical care. Our research is generously funded by the ACF Engineering and Physical Sciences Research Council (EPSRC) via UK Quantum Technology Research Hub in Sensing, Imaging and Timing (QuSIT).

We are seeking a Research Fellow to join our team and lead the research efforts in real-time and highly accurate preoperative-to-intraoperative fusion challenges in surgery tackling vision ambiguity and occlusions and other surgical complications.

The successful candidate will be responsible for developing novel ways to tackle such challenges and in setting up experiments with controlled robotic arm and various sensors for understanding the underlying principles on phantom models. You will be a leading researcher in Dr Sharib Ali's AI in Medicine and Surgery group (<https://artificial-intelligence.leeds.ac.uk/aims/>). You will have the opportunity to collaborate with other academics at Leeds and University of Glasgow and clinical team (Dr Venkat Subramanian, Leeds Teaching Hospital NHS Trust) to develop, and test developed systems.



Main duties and responsibilities

- Developing computer vision algorithms for image calibration, depth estimation, 2D/2.5D/3D registration, and real-time tracking;
- Leading the efforts in experimental setups for algorithmic assessments. These include working with silicon phantom, cadaveric samples and animal liver tests;
- Timely delivering of project milestones;
- Contribute towards the usability study and working with surgeons and public, such as conducting demos;
- Working with collaborators in the project to generate new ideas and contribute to a new strategic research project benefiting bedside translation;
- Generating and pursuing independent and original research ideas in the appropriate subject area;
- Developing research objectives and proposals and contributing to setting the direction of the research project and team including preparing proposals for funding in collaboration with colleagues;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own research;
- Making a significant contribution to the dissemination of research results by publication in leading peer-reviewed journals and by presentation at national and international meetings;
- Working independently and as part of a larger team of researchers, both internally and externally, to develop new research links and collaborations and engage in knowledge transfer activities where appropriate;
- Maintaining your own continuing professional development and acting as a mentor to less experienced colleagues as appropriate;
- Contributing to the training of both undergraduate and postgraduate students, including assisting with the supervision of projects in areas relevant to the project.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.



Qualifications and skills

Essential:

- A PhD (or have submitted your thesis before taking up the role) in Computer Science/Electronics and Electrical Engineering/Robotics or a closely allied discipline;
- A strong background in Computer Vision for (2D and/ 3D) image analysis and proficiency in programming language (e.g., Python and/ C++);
- Expertise and understanding of recent advances in deep learning techniques;
- Prior experience in image calibration, depth estimation, image registration, and/or tracking;
- Published at least one first author paper in top-tier computer vision/medical imaging conference venue, such as CVPR, ECCV, ICCV, ICLR, MICCAI, IPMI, ACM SIGGRAPH;
- Experience with data curation/collection and working in inter-disciplinary teams;
- Good time management and planning skills, with the ability to meet tight deadlines and manage competing demands effectively without close support;
- A developing track record of peer-reviewed publications in international journals, such as Science, Nature, IEEE TMI, IEEE TPAMI, Medical Image Analysis;
- Excellent communication skills both written and verbal, and the ability to communicate your research at national and international conferences;
- A proven ability to work well both independently and in a team;
- A strong commitment to your own continuous professional development.

Desirable:

- Experience of pursuing external funding to support research;
- Working with PyTorch, Git, and Unity;
- Prior experience working with UR 5e robotic platform;
- Prior experience in developing a prototype and its validation.

How to apply

You can apply for this role online; more guidance can be found on our [How to Apply](#) information page. Applications should be submitted by **23:59** (UK time) on the advertised [closing date](#).



Contact information

To explore the post further or for any queries you may have, please contact:

[Dr Sharib Ali](#), Associate Professor

Email: S.S.Ali@leeds.ac.uk

Additional information

Faculty and School Information

Further information is available on the research and teaching activities of the [Faculty of Engineering & Physical Sciences](#), and the [School of Computer Science](#).

Working at Leeds

We are a campus-based community and regular interaction with campus is an expectation of all roles in line with academic and service needs and the requirements of the role. We are also open to discussing flexible working arrangements. To find out more about the benefits of working at the University and what it is like to live and work in the Leeds area visit our [Working at Leeds](#) information page.

A diverse workforce

As an international research-intensive university, we welcome students and staff from all walks of life and from across the world. We foster an inclusive environment where all can flourish and prosper, and we are proud of our strong commitment to student education. Within the Faculty of Engineering and Physical Sciences we are dedicated to diversifying our community and we welcome the unique contributions that individuals can bring, and particularly encourage applications from, but not limited to Black, Asian and ethnically diverse people; people who identify as LGBT+; and people with disabilities. Candidates will always be selected based on merit and ability.

The Faculty of Engineering and Physical Sciences are proud to have been awarded the Athena Swan Silver Award from [AdvanceHE](#). The [Athena Swan Charter](#) is a framework which is used across the globe to support and transform gender equality within higher education and research. Our [equality and inclusion webpage](#) provides more information.



Information for disabled candidates

Information for disabled candidates, impairments or health conditions, including requesting alternative formats, can be found under the 'Accessibility' heading on our [How to Apply](#) information page or by getting in touch by emailing HR via hr@leeds.ac.uk.

Criminal Record Information

Rehabilitation of Offenders Act 1974

A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our [Criminal Records](#) information page.

Salary Requirements of the Skilled Worker Visa Route

Please note that this post may be suitable for sponsorship under the Skilled Worker visa route but first-time applicants might need to qualify for salary concessions. For more information, please visit [the Government's Skilled Worker visa page](#).

For research and academic posts, we will consider eligibility under the Global Talent visa. For more information, please visit [the Government's page, Apply for the Global Talent visa](#).

