



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

**Research Fellow in Autonomous Surgical Robots,
Faculty of Engineering and Physical Sciences**



Salary: Grade 7 (£39,105 – £46,485 p.a.)

Reference: EPSEE1135

Closing date: Sunday 24 November 2024

Fixed-term for 36 months

We are open to discussing flexible working arrangements

Research Fellow in Autonomous Surgical Robots, School of Electronic and Electrical Engineering.

Do you want to make a difference in patients' quality of life by creating innovative robots that are able to treat incurable diseases? Are you excited about contributing to scientific research in surgical robotics? Are you able to think outside the box to find innovative solutions to life-threatening diseases? Do you want to join a world-leading team of roboticists, manufacturing engineers, and clinicians?

We are looking for a proactive individual to join our Science and Technology Of Robotics in Medicine (STORM) Lab (<https://www.stormlabuk.com/>), bringing their excitement for scientific research in surgical robotics with them.

At the STORM Lab, we strive to improve the quality of life for people undergoing soft-tissue surgery and flexible endoscopy by advancing robotic technologies. Within the Robotic Surgery team, we focus on automating surgical tasks, enabling robots to begin making decisions and treating disease more effectively.

This vacancy was created by the EPSRC grant "TARAS - Tactile-driven Autonomy in Robot-Assisted Surgery", awarded to the University of Leeds, which aims at exploring how the incorporation of tactile sensors can contribute to the automation of surgical tasks in robotic procedures. The candidate will join a multi-disciplinary research team aiming to automate various surgical tasks using the da Vinci Research Kit (dVRK), a cutting-edge surgical robotic research platform, exploring different levels of computer assistance based on multi-modal sensing, and testing them in realistic anatomical models.

What does the role entail?

As Research Fellow, your main duties will include:

- Develop intelligent algorithms based on multi-modal sensing for autonomous medical robots addressing abdominal surgery (by using the dVRK);
- Incorporate novel tactile sensing interfaces within surgical tools;
- Model, control, test and validate different levels of computer assistance in robotic surgery for early-stage cancer detection and removal;



- Contribute to the pre-clinical assessment of developed systems in animal and/or cadaveric models in collaboration with our clinical partners;
- 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.

What will you bring to the role?

As Research Fellow, you will have:

- A PhD (or have submitted your thesis before taking up the role) in one of the following disciplines: Mechanical Engineering, Biomedical Engineering, Computer Science, Electronic Engineering, Robotics or a closely allied discipline;
- Experience and a proven track record in robotic automation, preferably with a focus in the medical field (Python, C/C++, Java, Robot Operating System (ROS), and Mathworks MatLab are preferred);
- Experience working with the da Vinci Research Kit or other research-grade surgical robotic platforms;



- 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;
- 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 individually and in a team;
- A strong commitment to your own continuous professional development.

You may also have:

- Experience of pursuing external funding to support research;
- Experience in:
 - designing/developing novel tactile sensors;
 - artificial intelligence and/or machine learning;
 - collaborating with clinicians, including in pre-clinical trials in animal or cadaver models;
 - designing and developing Finite Element simulations of soft robotic and/or magnetic systems.

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. Dominic Jones](#), Lecturer in Medical Robotics

Tel: +44 (0)113 343 2179

Email: D.P.Jones@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 Electronic and Electrical Engineering](#).

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 the Equality Challenge Unit, the national body that promotes equality in the higher education sector. 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](#).

