

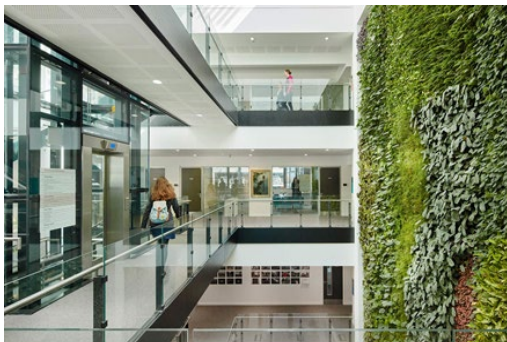
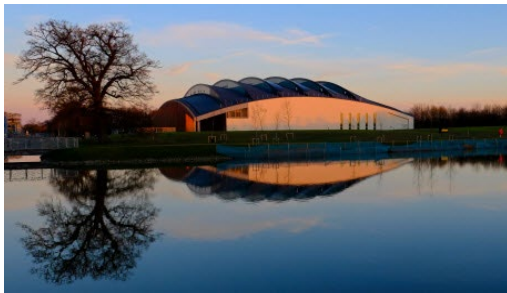


UNIVERSITY OF
CAMBRIDGE

Research Fellow in AI-Augmented Spatial Analysis

Department of Land Economy

Closing Date: 20th August 2025
Job Reference: JP46689



Research Fellow in AI-Augmented Spatial Analysis

Salary:

£37,174 - £45,413 per annum

Contract:

Fixed Term for three years

Location:

Cambridge

Faculty / Department:

Lab of Interdisciplinary Spatial Analysis (LISA),
Department of Land Economy

Responsible to:

Professor Helen Bao

Working Pattern:

Full Time

The University of Cambridge has a Hybrid Working Policy that aims to enable as many staff as possible to work in a hybrid way if they so wish, whilst recognising that some roles will include tasks that can only be performed on University premises.

Purpose of the role

The Research Fellow in AI-Augmented Spatial Analysis will be based at the Lab of Interdisciplinary Spatial Analysis (LISA) <https://www.landecon.cam.ac.uk/lab-interdisciplinary-spatial-analysis> at the Department of Land Economy at the University of Cambridge. The Fellow will work with Principal Investigator Professor Helen Bao, Professor of Urban Economics and Housing Policy. <https://www.landecon.cam.ac.uk/directory/dr-helen-xiaohui-bao>.

The **City University of Hong Kong Postdoctoral Research Fellow in AI-Augmented Spatial Analysis**, which is funded by the City University of Hong Kong (CityUHK), will work in LISA and its ecosystem in Cambridge and beyond, with a view to developing LISA's research capacity in AI-augmented spatial analysis.

Key responsibilities

The Fellow is expected to lead the development and application of machine learning and artificial intelligence methods in spatial analysis within the Department. Land Economy is defined as the multidisciplinary study of how society interacts with the environment, both natural and built. The Department includes researchers from economics, law, planning, public policy, finance, real estate and engineering. LISA supports spatial research across these fields, with a focus on GIS and its applications in environmental, urban, housing, and institutional studies.

The Fellow will contribute to ongoing research at LISA, in particular the *eMotional Cities* project, a Horizon 2020-funded collaboration that has mapped emotional hotspots in four cities in the UK and EU using spatial analysis of social media data. The next phase of the project aims to incorporate explainable AI (XAI) to interpret and explain the spatial patterns already identified. The Fellow will help advance this work by generating actionable insights for policymakers addressing mental health and well-being in both urban and rural contexts.

Key responsibilities continued

The Fellow is also expected to work closely with the PI to prepare and submit applications for major funding opportunities in the UK and EU, with the aim of securing large-scale grants to scale up the *eMotional Cities* initiative. This will require familiarity with interdisciplinary collaboration, research design, and proposal development.

Candidates should have a PhD (submitted or nearly submitted at the time of application) in a field relevant to urban economics, spatial econometrics, geography, urban planning, or data science, with a strong quantitative focus. Applicants should have experience in spatial analysis and/or machine learning methods, and an interest in applying these tools to urban and housing policy questions.

The Fellow should demonstrate potential for producing high-quality research and a strong commitment to empirically grounded, quantitative, and interdisciplinary work. In addition to academic outputs, the successful candidate will be expected to play an active role in the development of collaborative research proposals, including those submitted to major international and national funders such as Horizon Europe, UKRI, and the ESRC. Strong communication and coordination skills are essential, as the role involves sustained engagement with a wide range of stakeholders—including academic collaborators, policy makers, industry partners, and civil society organisations—often within large, multi-institutional research consortia.

The position is full-time and fixed-term for three years, with a 6-month probationary period.

Declaration on Research Assessment

The University of Cambridge is a signatory to the San-Francisco Declaration on Research Assessment (DORA), and in recruitment or promotion evaluations will assess research on the basis of its merits rather than the journal or venue in which it is published. Applicants should not include Journal Impact Factors or uncontextualized metrics in their applications. Full details are at: <https://www.research-strategy.admin.cam.ac.uk/research-policy/DORA>

Person Specification

Criteria	Essential	Desirable
Education		
PhD (submitted or nearly submitted at the time of application) in a field relevant to urban economics, spatial econometrics, geography, urban planning, or data science, with a strong quantitative focus.	✓	
Specialist Knowledge and Skills		
Demonstrated ability to conduct research (formulating, structuring, conducting, contextualizing, presenting outputs), and/or equivalent contributions to advancing knowledge within professional practice, relevant to urban economics, spatial econometrics, geography, urban planning, or data science, with a particular emphasis on spatial and computational approaches.	✓	
Demonstrated potential (via publications, conference presentations, grants, and/or other projects, activities or recognitions) to develop an independent research agenda that integrates artificial intelligence, machine learning, and spatial analysis to address urban and environmental challenges.	✓	
Demonstrated training, knowledge, and research outputs in the application of machine learning, large language models (LLMs), and/or econometric techniques to spatial, urban, or behavioural data.	✓	
Excellent analytical and critical reasoning skills, with the ability to work across disciplinary boundaries and engage with diverse data types and methodological approaches.	✓	
Experience with explainable AI (XAI) methods		✓
Interpersonal and Communication Skills		
Excellent interpersonal, oral and written communication skills, necessary to interact with other researchers and various stakeholders in the public, private and not-for profit sectors.	✓	
Relationship-building and ambassadorial skills for engaging diverse external audiences and stakeholders.	✓	
Relevant Experience		
Demonstrated interest in and ability to work collaboratively in highly interdisciplinary and intercultural teams and environments.	✓	
Experience organising events or conferences that creatively convene academic, practitioner and policy audiences, particularly at the international level.		✓

Department of Land Economy



The Department of Land Economy is a leading international centre, providing a full programme of taught courses within an intensive, research-oriented environment. In the 2022 Research Excellence Framework assessment, the Department came out on top, with 67% of the Department's research work described as "World Leading" and a further 31% "Internationally Excellent".

About the Department

The Department currently has over 40 teaching and research staff and approximately 320 students. We have a three-year undergraduate course and a postgraduate programme that offers both instructional and research-based MPhils, two MSt, as well as a three-year PhD. Research within the Department falls into one of our two research groups, namely Real Estate and Urban Analysis and Environmental Economy and Policy.

The Department addresses contemporary problems as well as more fundamental analysis. This includes both the role of governments in establishing regulatory frameworks within which land and related markets operate and the role of private organisations in owning, managing and developing physical and financial assets within those markets. This combination gives the Department of Land Economy a unique and valuable perspective of critical public and private issues. As a department, we actively encourage staff and students to go about their duties in a resource-efficient way and minimise impacts to the environment wherever possible.

Key information

Land Economy, as a subject, considers the role and use of land, real estate and environment within an economy. It applies particularly the disciplines of economics, law and planning for the analysis of the governance of land use, urban areas, and interactions with other environmental resources.

The School of Humanities and Social Sciences

The School of the Humanities & Social Sciences is a diverse community of academics, students and staff from across all of our related subjects. Cambridge's reputation for excellence rests upon our outstanding teaching and our world-class research. The Institutions of the School support scholars who are leading authorities in their fields, and are home to innovative and collaborative research projects which continue to push the boundaries of our knowledge and refine how we think and see the world.

About the School

The six Schools of the University are administrative groupings of related subjects. The Council of each School acts as a coordinating organisation for the group, managing and prioritising requests from Faculties and Departments for consideration by the General Board.

The following institutions are within the scope of the Council of the School of the Humanities and Social Sciences:

- Faculty of Economics
- Faculty of Education

- Faculty of History
- Faculty of Law
- Department of Archaeology
- Department of History & Philosophy of Science.
- Department of Land Economy
- Department of Politics and International Studies.
- Department of Social Anthropology
- Department of Sociology
- The Institute of Criminology

The School's total annual expenditure from grants, fees, research grants and contracts and other sources is about £65m. The institutions in the School employ about 1000 staff (academic, assistant and contract). The School has more than 5,000 students, undergraduates and postgraduates, over a quarter of the University's total student population. The post holder will be an integral member of the School Office team.

The Council of the School is chaired by the Head of School, fulfilled by an appointment of a senior academic and supported by a Deputy Head with an education portfolio. The School Office is currently based at 17 Mill Lane, in central Cambridge.



Terms of Appointment

Tenure and probation

Appointments will be made on a fixed-term basis for three years, due to limited funding. Appointments will be subject to satisfactory completion of a six-month probationary period.

Hours of Work and Working Pattern

The hours of work for the position are 37 hours per week, working Monday – Friday.

Pension

You will automatically be enrolled to become a member of USS (Universities Superannuation Scheme) – a hybrid pension scheme. For further information please visit: <http://www.pensions.admin.cam.ac.uk>

Annual leave

Full time employees are entitled to annual paid leave of 41 days inclusive of public holidays. For new part-time employees, annual leave will be pro rata'd based on days worked.

General information

Pre-employment checks

Right to work in the UK

We have a legal responsibility to ensure that you have the right to work in the UK before you can start working for us. If you do not have the right to work in the UK already, any offer of employment we make to

you will be conditional upon you gaining it.

Health declaration: Once an offer of employment has been made the successful candidate will be required to complete a work health declaration form.

Qualifications: The person specification for this position lists qualifications that are essential and/or desirable. Please note that if you are offered the post you will be asked to provide your relevant original certificates of these qualifications.

References: Offers of appointment will be subject to the receipt of satisfactory references.

Equality and Diversity

We particularly encourage women and /or candidates from a Black, Asian and Minority Ethnic background to apply for this vacancy as they are currently under-represented at this level within our University.

Information if you have a disability

The University welcomes applications from individuals with disabilities. We are committed to ensuring fair treatment throughout the recruitment process. We will

make adjustments to enable applicants to compete to the best of their ability wherever it is reasonable to do so and, if successful, to assist them during their employment.

Information for disabled applicants is available at <http://www.admin.cam.ac.uk/offices/hr/staff/disabled/>

We encourage you to declare any disability that you may have, and any reasonable adjustments that you may require, in the section provided for this purpose in the application form. This will enable us to accommodate your needs throughout the process as required. However, applicants and employees may declare a disability at any time.

If you prefer to discuss any special arrangements connected with a disability, please contact, the Department Administrator, who is responsible for recruitment to this position.

The University

The University of Cambridge is consistently ranked one of the best universities in the world, achieving academic excellence through its Faculties, Departments and other Institutions, together with the 31 Colleges.

The University is renowned for its record of discovery and innovation. It is one of the great institutions, with a regional, national and global reach, attracting the very best and brightest minds. Our staff and students shape the world around us for the better: we attract and partner with like-minded people.

Whether contributing to the development of new anti-cancer drugs, adding to the understanding of how black holes are formed, revolutionising the study of ancient settlements, convening academic expertise to offer solutions to the climate crisis, or analysing public attitudes towards democracy around the world, the University's research is remarkable in its breadth, quality and impact. The University also sits at the heart of Europe's largest technology cluster and has catalysed more than 1,500 high-tech companies. And yet what inspires our 24,000 students and 13,000 staff is not what has already been achieved, but what is possible in the future.

The education and experience of our students, based on a partnership between the University's academic Departments and Faculties and the 31 Colleges, is second to none. Every student is a member of one of the Colleges, each a community of students, academics and staff drawn from across the University's comprehensive range of subject areas.



The University is a self-governing community, with a system for decision-making that provides a high degree of accountability and transparency to its members. Each Department and Faculty is part of one of six academic Schools, but each of them, and each individual academic, has a great deal of autonomy. The Colleges are independent and self-governing, working in a symbiotic relationship with the University.

The University has a number of Institutions that are independent of any Faculty or Department and are not part of the academic Schools. These include the Institute of Continuing Education (which provides high-quality education to adults throughout their lives), the Fitzwilliam Museum, Kettle's Yard (an historic house and gallery that holds important collections of modern art) and the University Library. In addition to their diverse contributions to University and public life, these non-School Institutions are also important centres of teaching and research.

Cambridge University Press & Assessment provides academic publishing, examinations and learning materials worldwide, supporting the dissemination of research, academic development at school and in higher education, and international student mobility. Legally, the Press & Assessment is a department of the University. It provides very important funds to invest in the academic purposes of the University.

The University has made truly remarkable contributions to the sum of human understanding, with breakthrough ideas and discoveries that have changed the way we understand ourselves, our planet, and the universe around us. Yet the global and national contexts in which it operates are fast-changing and increasingly filled with uncertainty. In a world that is becoming - politically, economically, socially, and technologically – ever more interconnected but even less equal, the University's mission – “to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence” – has never been more relevant.



About Us

The University is one of the world's leading academic centres. It comprises 150 faculties and departments, together with a central administration and other institutions. Our institutions, museums and collections are a world-class resource for researchers, students and members of the public representing one of the country's highest concentrations of internationally important collections.

The University has an annual income of £2 billion. Research income, won competitively from the UK Research Councils, the European Union (EU), major charities and industry, exceeds £500 million per annum and continues to grow.

The Colleges and the University remain committed to admitting the best students regardless of their background and to investing considerable resources both in widening access and financial support. The 31 Colleges are self-governing, separate legal entities which appoint their own staff. Many academic staff are invited to join a College as a Teaching Fellow, which provides a further social and intellectual dimension. The Colleges admit undergraduate students, provide student accommodation and pastoral support and deliver small group teaching for undergraduates.

The University awards degrees and its faculties and departments provide lectures and seminars for students and determine the syllabi for teaching.

Our instinct for seeking out excellence and setting up enduring and mutually beneficial collaborations has led us to establish strategic partnerships across the globe. Whether it is the successful Cambridge-Africa Programme involving universities in Ghana, Uganda and elsewhere on the African continent; or the close association with the government of India to pursue new research in crop science; or the creation, with Germany's Max Planck Institutes, of a Cambridge-based centre for the study of ethics, human economy and social change – international partnerships are now an inextricable part of the University's make-up.

“Through its outstanding education, research and innovation, the University of Cambridge has made – and continues to make – a lasting contribution to human knowledge and is flourishing. By working at the University of Cambridge, you will be joining a vibrant community of students, scholars and professional services staff committed to supporting and enhancing the University's mission to contribute to society.”

*Professor Deborah Prentice,
Vice Chancellor 2023*



Working at the University

Working at Cambridge you will join a diverse, talented and innovative community, with more than 24,000 students and over 13,000 staff from all walks of life and corners of the world.

The University continually explores strategies to attract and retain the best people. It is committed to supporting its staff to achieve their best. We are a fair, diverse and inclusive society and we believe our staff are our greatest asset. There is strong commitment to developing institutional leadership and supporting and encouraging staff development at all levels.

The University offers a variety of roles including academic, research, professional, managerial and support roles. We also offer extensive benefits and excellent learning opportunities within a stimulating working environment.

The University's estate is undergoing the most significant transformation in its history. Cambridge has been able to create a science and technology campus to the west of the city centre, and is expanding further to the north west of Cambridge including investing in affordable homes for University key workers and community facilities. Even with their continued development, the University remains within walking or cycling distance across the campus. The University is a major partner on the Cambridge Biomedical Campus and continues to redevelop its historic city centre sites demonstrating a clear determination to ensure that we can offer the best facilities and opportunities for our staff and students.



Equality, Diversity and Inclusion

The University has built its excellence on the diversity of its staff and student community. We aim to be a leader in fostering equality and inclusion, and in promoting respect and a sense of belonging for all. We encourage applications from all sections of society. All appointments are made on the basis of merit. We have an Equal Opportunities Policy, along with a range of diversity groups, including the Women's Staff Network, Race Equality Network and LGBT+ Staff Network. More details are available here:

<http://www.equality.admin.cam.ac.uk/>

The University has a bronze Race Equality Charter award, with a framework for improving the representation, progression and success of minority ethnic staff and students within higher education. Furthermore, the University's silver Athena swan award recognises and celebrates good practice in recruiting, retaining and promoting gender equality.

Living in Cambridge

Cambridge is rich in cultural diversity. From beautiful University and College buildings, museums and art galleries, quaint gardens and punts on the River Cam, to a vibrant restaurant and café scene, our employees are surrounded by the wonderful features of this unique city.

You can find a wide-range of high street shops and 3 shopping centres, with independent alternatives at the historic market and nestled within the passageways in the city centre. You will find a cinema, bowling alley, a nightclub and various live performances at the Cambridge Leisure Park, with further entertainment options at the Corn Exchange, Arts Theatre and the ADC Theatre. Further information can be found on the Visit Cambridge website.

If you prefer the faster pace of life, London is a 45-minute train journey away. For those travelling from overseas, Stansted Airport is just 45 minutes away and Heathrow Airport under 2 hours away. The University is a short distance from a host of other attractions such as Ely Cathedral, Newmarket Races and various wildlife parks and stately homes. Cambridge is also within easy reach of the beautiful Broads and coastlines of Norfolk and Suffolk.

Relocation Support

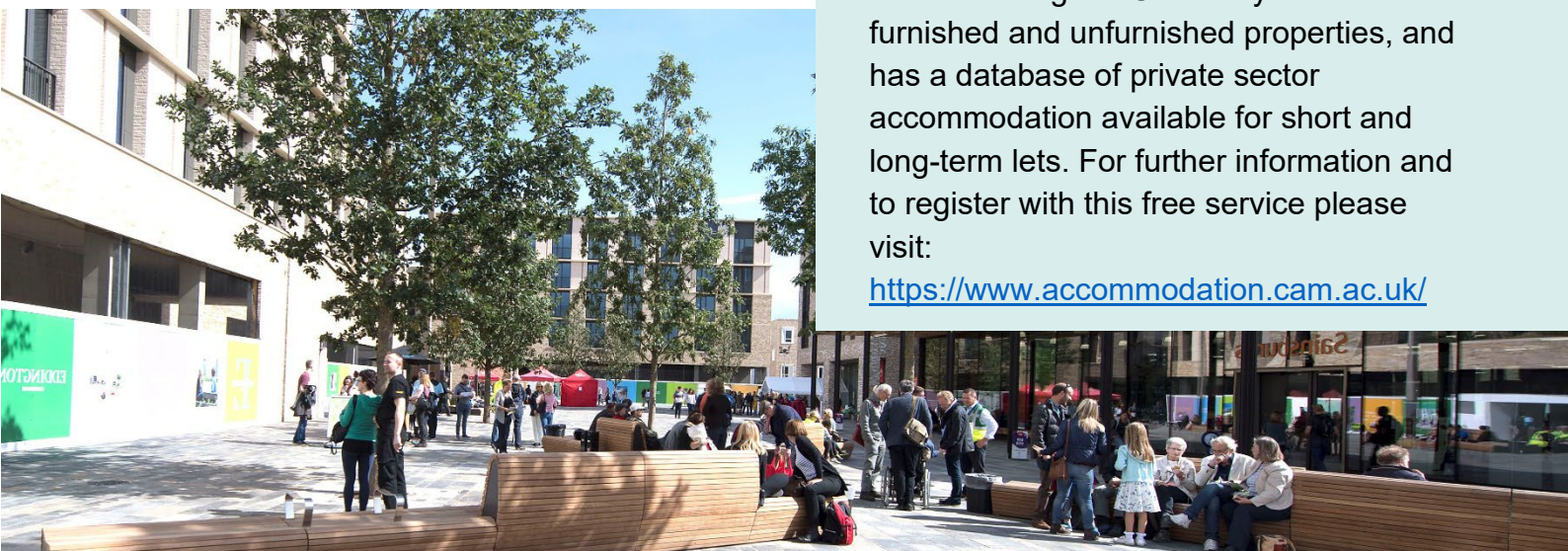
The University recognises the importance of helping individuals to move and settle into a new area. We provide support and guidance to those relocating internationally or domestically to take up a post at the University of Cambridge, liaising with other University offices and selected partners to ensure comprehensive relocation support is available. This includes: accommodation, childcare, schools, banking, immigration and transport. If you would like further information, please visit

<https://www.accommodation.cam.ac.uk/RelocationService/>. The Shared Equity Scheme and the Reimbursement of Relocation Expenses Scheme provide financial assistance to qualifying new members of staff with the costs of relocating to Cambridge.

Accommodation Service

The University Accommodation Service helps staff, students and visiting scholars who are affiliated to the University in their search for suitable accommodation in Cambridge. The dedicated accommodation team can provide access to a wide range of University-owned furnished and unfurnished properties, and has a database of private sector accommodation available for short and long-term lets. For further information and to register with this free service please visit:

<https://www.accommodation.cam.ac.uk/>



What Cambridge can offer

We offer a comprehensive reward package to attract, motivate and retain high performing staff at all levels and in all areas of work.

The University offers a wide range of competitive benefits, from family leave entitlement, to shopping and travel discount schemes. Our generous annual leave package contributes to the positive wellbeing of our University employees. Sabbatical leave enables academics to focus on research and scholarship, whilst still maintaining their full salary. The University also has a [career break scheme](#) for academic and academic-related staff, with additional flexible working policies for all other staff.



Pay and benefits

The University salary structure includes automatic service-related pay progression in many of its grades and an annual cost of living increase. In addition to this, employees are rewarded for outstanding contribution through a number of regular pay progression schemes. The University offers attractive pensions schemes for employees, with an additional benefit of a salary exchange arrangement providing tax and national insurance savings.

CAMbens employee benefits

The University offers employees a wide range of competitive benefits, known as CAMbens. CAMbens offers something for everyone across a range of categories, including:

- Financial Benefits, including shopping discounts (both local and national) and a Payroll Giving scheme;
- Relocation and Accommodation Benefits, including relocation assistance and interest-free Rental Deposit Loans;
- Travel Benefits, including Cycle to Work, discounts on train season tickets and interest-free Travel to Work loans;
- Family Friendly and Lifestyle Benefits, including support with childcare and family friendly policies;
- Health and Wellbeing Benefits, including a University Staff Counselling Service, discounts at the University Sports Centre, and other local gyms, and healthcare schemes.



What Cambridge can offer

Family-friendly policies

The University recognises the importance of supporting its staff. We have a range of family-friendly policies to aid employees' work-life balance including a generous maternity, adoption and shared parental leave entitlement of 26 weeks' full pay, and paid emergency leave for parents and carers.

Other family-friendly support includes:

Our highly regarded workplace nurseries, a childcare salary exchange scheme and a high-quality holiday Playscheme are available to help support University employees with caring responsibilities (subject to demand and qualifying criteria). Further childcare information can be found here:

<https://www.childcare.admin.cam.ac.uk/>

The Newcomers and Visiting Scholars Group (<https://www.nvs.admin.cam.ac.uk/>) is an organisation within the University that welcomes the partners and families of visiting scholars and new members of the University. Run by volunteers, the group offers opportunities to visit interesting Cambridge venues, learn about the community, take part in social events and gain local knowledge while developing a strong support network of both residents and other newcomers.

Your wellbeing

The University's Sport Centre, Counselling Services and Occupational Health are just some of the support services available to University employees to promote their physical and mental wellbeing. The University delivers The Festival of Wellbeing annually, which is a programme of stimulating talks and activities, which aim to promote wellbeing and good mental and physical health. The University also hosts the [Cambridge Festival](#), which is a great opportunity to get your first taste of public engagement, through volunteering, supporting hands-on activities or proposing a talk.

Development opportunities

We support new employees to settle in through various activities as well as supporting their professional and career development on an ongoing basis. Our Personal and Professional Development (PPD) team provide development opportunities for all University employees, including face-to-face sessions, online learning modules and webinars. All employees also have unlimited access to LinkedIn Learning to support their development. Both new and existing employees can undertake funded Apprenticeships, which lead to a range of vocational and professional qualifications. We offer reduced staff fees for University of Cambridge graduate courses and the opportunity to attend lectures and seminars held by University departments and institutions. A range of University training providers also offer specialist learning and development in their own areas e.g. teaching and learning, digital literacy, finance, health and wellbeing, safety.



How to apply

Applications should be submitted online via the University of Cambridge jobs page www.jobs.cam.ac.uk by clicking “Apply online” in the job advert. You will need an email address to register for our online system.

Please upload the following:

- a full Curriculum Vitae including a list of publications
- a cover letter including a statement of your research, your relevant work experience and qualifications, and in general how your profile fits the position using no more than 1,500 words
- the contact details of two referees

After shortlisting, where you have given permission, your nominated referees will be asked to provide a reference via the on-line system.

Informal enquiries are welcomed and should be directed to: **Professor Helen Bao** -
Email: hxb20@cam.ac.uk

If you have any queries regarding the application process, please contact
hr@hsps.cam.ac.uk

Please quote reference **JP46689** on your application and in any correspondence about this vacancy.

The closing date for applications is **20th August 2025**.

Interviews will be held soon after the closing date.

