CANDIDATE BRIEF

Research Assistant in Machine Learning for Urban Data Science, Faculty of Environment

Salary: Grade 6 (£32,296 – £37,999 p.a. depending on experience)

Reporting to: Nicolas Malleson

Reference: ENVGE1255

Part time: 20% FTE (7.5 hours per week)

Fixed term for 12 months to complete specific time limited work

Location: University of Leeds (with scope for hybrid working)

We are open to discussing flexible working arrangements

Research Assistant in Machine Learning for Urban Data Science, School of Geography, Faculty of Environment

Overview of the Role

Are you an ambitious researcher interested in data analysis, urban dynamics and neighbourhood change? Do you want to further your career in one of the UK's leading research-intensive Universities?

You will work on a project, funded by the UKRI's Economic and Social Research Council, called Integrated Analysis of Social Media and Hedonic House Prices for Neighbourhood Change (INTEGRATE). The project is conducting advanced data analysis and modelling to quantify neighbourhood changes over time by linking social media data (SMD) and other text-based sources with house price models.

The aim is the establish innovative methods for analysing neighbourhood spatio-temporal dynamics, with a focus on identifying gentrification patterns and their impact on local housing markets. Specifically, the project will capture perceived neighbourhood characteristics from SMD using advanced text engineering and natural language processing methods. It is doing this using 3 global parallel case studies in the UK, New Zealand, and Vietnam, and collaborating with researchers in those countries.

The project needs a data scientist to support the extraction and analysis of gentrification related concepts from text sources and to link these to classic hedonic house price model data to inform on social dynamics, patterns and processes within cities. The successful candidate will have the opportunity to join the investigators on a research visit to Vietnam as part of the project.

The research team is led by Professor Lex Comber and will be located within the School of Geography and the Leeds Institute for Data Analytics (LIDA), both of which are emerging as international centres of excellence in agent-based modelling. The city of Leeds is already recognised as a hub for big data analytics in business, health care and academic research. In addition, the University is a partner in the Alan Turing Institute, which is the UK's national institute for artificial intelligence and data science,

offering exciting opportunities to for researchers to engage with scientific leaders from a range of fields.

Main duties and responsibilities

- Writing robust, well documented computer software;
- Writing reports, undertaking literature reviews and preparing papers for publication, with guidance as necessary;
- Working both independently and as part of a larger team of researchers and stakeholders;
- Supporting research activities, including contributing to research results and outputs and to the generation of independent and original ideas, ensuring a successful programme of investigation;
- Collating and analysing data to inform the direction and progression of the research project;
- Participating in the research group and presenting research output where appropriate;
- Contributing to the research culture of the School, where appropriate;
- Continually updating your knowledge, understanding and skills in the research field.

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 master's degree in Geography, Computer Science, Mathematics, Statistics, Physics, or a related discipline with a significant component of programming and/or data science;
- A demonstrable ability to develop efficient, robust and well-documented computer code in Python;
- Experience in developing machine-learning or related statistical models using Python libraries, such as scikit-learn;
- Skills in the acquisition, manipulation and analysis of diverse forms of spatio-temporal data;

- An ability to write high-quality research papers;
- Good interpersonal and communication skills, both written and verbal and the ability to communicate effectively with a wide range of stakeholders;
- Well-developed analytical skills;
- Good time management and planning skills, with the ability to meet tight deadlines;
- A proven ability to work well both individually and in a team;
- The ability to work unsupervised and to use your own initiative.

Desirable
- Experience in Natural Language Processing and related machine learning techniques that are commonly used in data science;
- Experience in the use of Large Language Models for research.

Additional information

Please note: If you are not a British or Irish citizen, from 1 January 2021 you will require permission to work in the UK. This will normally be in the form of a visa but, if you are an EEA/Swiss citizen and resident in the UK before 31 December 2020, this may be your passport or status under the EU Settlement Scheme.

Please note that due to Home Office visa requirements, this role may only be suitable for first-time Skilled Worker visa applicants if they are eligible for salary concessions. For more information please visit: www.gov.uk/skilled-worker-visa

For research and academic posts, we will consider eligibility under the Global Talent visa. For more information please visit: https://www.gov.uk/global-talent

Find out more about the Faculty of Environment

Find out more about the School of Geography

Find out more about our Research and associated facilities

Find out more about equality in the Faculty

Our University

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 Environment 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 Environment has received a prestigious Athena SWAN silver award from Advance HE, the national body that promotes equality in the higher education sector. This award represents the combined efforts of all schools in the Faculty and shows the positive actions we have taken to ensure that our policies, processes and ethos all promote an equal and inclusive environment for work and study.

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.

Candidates with disabilities
Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our Accessibility information page or by getting in touch with us at disclosure@leeds.ac.uk.

Criminal record information

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.