UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Machine Learning for Agroclimatic Adaptation, Faculty of Environment

Salary: Grade 7 (£41,064 – £48,822 p.a.)

Reporting to: Professor Amanda Maycock

Reference: ENVEE1880

Fixed-term for up to 26 months – to complete specific time limited work due to external funding

We will consider job share / flexible working arrangements

Research Fellow in Machine Learning for Agroclimatic Adaptation
School of Earth, Environment and Sustainability, Faculty of Environment and Social Sciences

Are you an ambitious researcher looking for your next challenge? Do you have a background in machine learning with an interest in applying your skills to pressing societal issues like climate change? Do you want to further your career in one of the UK's leading research intensive Universities?

You will join a team of climate scientists and machine learning specialists at the University of Leeds to work on the new EU Horizon Europe project "Dynamic climate-agriculture intelligence for EU land management and cropping systems adaptation (TIPPING)". TIPPING is a 3-year project coordinated by Neuropublic, an SME based in Greece, and involving 16 partners across Europe. You will work with Prof Amanda Maycock, Dr Chetan Deva and Dr Maria Karypidou to develop machine learning downscaling methods for climate model datasets to provide high spatial resolution climate information that will be used by other partners to assess the changing agroecological zones in Europe under future scenarios. We will also apply machine learning to study the potential effects of future climate tipping points on agriculture. You will work collaboratively with scientists across the project.

You will have, or be close to obtaining, a PhD in the field of Computer Science, Atmospheric, Ocean or Climate Science with experience of developing machine learning models. You will have evidence of a strong commitment to publishing scientific results at an international level.

Main duties and responsibilities

As a Research Fellow, your main duties will include:

- Working with and in support of Prof Maycock and Dr Deva to ensure the objectives and deliverables of the TIPPING project are successfully met;



- Leading the acquisition and management of the weather and climate datasets required for TIPPING research;
- Developing and applying appropriate machine learning methods (for example GANs, Diffusion models) to downscale and bias correct coarse climate model data to high spatial resolution;
- Developing downscaling architectures that generalise well across climate data sets.
- Keeping abreast with the latest research on machine learning downscaling in a rapidly paced field and applying new innovations in TIPPING where possible;
- Developing research objectives and contributing to the direction of the research project in collaboration with TIPPING project partners;
- Generating and pursuing independent and original research ideas in the appropriate subject area;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own work;
- Preparing papers for publication in leading international journals and disseminating research results through other recognised forms of output;
- Working both independently and also as part of a larger team of researchers, engaging in knowledge-transfer activities where appropriate and feasible;
- 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

<u>Essential</u>

- A PhD or near completion - i.e. the initial thesis needs to have been handed in at the point of application in computer science, meteorology, atmospheric or climate science or a closely allied discipline;



- A strong background in machine learning, including application in previous research projects;
- Experience of handling large, complex datasets on high performance computing facilities;
- A strong interest in applying machine learning to environmental problems;
- Good time management and planning skills, with the ability to meet tight deadlines, manage competing demands and work effectively under pressure without close support;
- An emerging track record of peer-reviewed publications in well regarded climate and atmospheric science journals;
- The ability to independently design and conduct research to address an identified research gap;
- Excellent written and verbal communication skills including presentation skills;
- A proven ability to work well both individually and in a team;
- A strong commitment to your own continuous professional development.

Desirable

- Experience of analysing climate datasets such as reanalysis data, weather or climate model output;
- Experience of applying machine learning methods to computer vision problems.

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.

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.

Find out more about our School of Earth and Environment

Find out more about the Faculty of Environment

Find out more about our Research and associated facilities

Find out more about equality in the Faculty.

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 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

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.