



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Software Development Scientist, Faculty of Environment



Salary: Grade 7 (£37,099 – £44,263 p.a. depending on experience)

Reporting to: Mark Richardson

Reference: ENVEE1728

Location: University of Leeds

We are open to discussing flexible working arrangements

Overview of the Role

Are you an ambitious software developer looking for your next challenge? Do you have a background in research computing? Do you want to further your career in one of the UK's leading research-intensive Universities?

The School of Earth and Environment (SEE) is seeking to appoint a Software Development Scientist within the Centre for Environmental Modelling and Computation (CEMAC). CEMAC is an established research computing centre within SEE which aims to substantially enhance the School's research, teaching, impact and outreach capabilities, related to computer modelling, data analysis and visualization. The successful candidate would join growing team of ~10 software developers and specialist research computing scientists already working on a broad range of scientific computing projects across the School.

In this role, you will have the opportunity to work on complex scientific codes, providing innovative computational solutions to diverse environmental problems, and contributing to the development of the research and teaching strategies of the School. You will also help CEMAC to maintain a skills base at the leading edge of research computing techniques, continually developing new and novel applications that help translate science into high impact results.

You will have a PhD in an appropriate technical, scientific, or engineering discipline, ideally with a strong software development component. You will also have a proven track record of developing and maintaining codes to study complex, cutting edge scientific problems, ideally in the physical sciences.

Main duties and responsibilities

- Designing, developing and maintaining complex scientific software for environmental science applications;
- Contributing to software engineering expertise in model and data science, helping to realise the scientific ambitions of the School of Earth and Environment;
- Contributing technical computing expertise to the high-level training of researchers and students, development of funding proposals, new numerical computing initiatives, and scientific papers;



- Generating and pursuing independent and original research computing ideas appropriate to project-specific research areas;
- Developing research objectives 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 CEMAC and School researchers and to relate such evaluations appropriately to your own work;
- Working both independently and also as part of a larger team, 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.

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 in an appropriate technical, scientific, or engineering discipline, ideally with a strong software component;
- Excellent Python programming skills;
- Experience in working with high volume data workflows in an HPC environment;
- Excellent problem-solving skills, with the ability to take possession of and provide solutions for complex problems in a multi-disciplinary team environment;
- Experience with using or maintaining large geophysical numerical models;
- Experience in managing large volumes of data;
- Ability to prioritise and complete multiple assignments; ability to organise and multi-task, and meet deadlines;
- Excellent oral and written communication skills, including skills in preparing and making short presentations and documentation on computing topics;
- A proven ability to work well both individually and in a team;
- A strong commitment to your own continuous professional development.



Desirable

- Experience programming for multi-threaded software (OpenMP/OpenACC) or CUDA for GPU;
- Practical experience of programming with FORTRAN, or C, or C++;
- Understanding of profiling and performance tuning for HPC;
- Experience in working within a software life cycle (liaising with user needs, code design, code testing, source code repositories, version control);
- A high level of proficiency in Unix-based high-performance computing (HPC) and parallel programming (OpenMP, MPI), including knowledge of job scheduling;
- Proficiency in Conda environments;
- Practical experience of applying machine learning techniques to scientific research;
- Experience in visualisation of large complex datasets.

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 [CEMAC](#)

Find out more about the [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 and inclusion](#) in the Faculty

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.

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, people who belong to a minority ethnic community; people who identify as LGBT+; and disabled people. 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.

Information for disabled candidates

Information for disabled candidates, impairments or health conditions, including requesting alternative formats, can be found on our [Accessibility](#) information page or by getting in touch with us at 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.

