UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Software Development Scientist, School of Earth and Environment, Faculty of Environment

Salary: Grade 7 (£32,548 – £38,833 p.a.)

Reference: ENVEE1183

Closing date: 2 October 2017

Interviews are expected to be held on Tuesday 10 October 2017

Software Development Scientist
Institute for Climate and Atmospheric Science (ICAS)
School of Earth and Environment, Faculty of Environment

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

The Centre of Excellence for Modelling the Atmosphere and Climate (CEMAC) has been established within ICAS to substantially enhance the institute's research, teaching, impact and outreach capabilities, related to computer modelling, data analysis and visualisation. Jointly with the National Centre for Atmospheric Science (NCAS) and the Met Office-NERC Joint Weather and Climate Research Programme, we seek to appoint a Software Development Scientist within CEMAC.

A significant part of the role will be carrying out development of the Met Office's flagship Unified Model system, contributing to progressing scientific understanding of a large range of issues from regional weather processes, to global climate and Earth system interactions. You will have the opportunity to work on a wide variety of scientific codes and problems and to contribute to scientific development of the research strategy of the ICAS research community.

You will have a first degree (Bachelor's or equivalent qualification) in an appropriate technical, scientific, or engineering discipline, ideally with a strong software engineering 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.

What does the role entail?

As a Software Development Scientist, your main duties will include:

- Carrying out project work on scientific programming, code optimisation, parallel computing, porting models to new platforms, post-processing, data extraction, visualisation, large-scale data handling and storage;
- Contributing to software engineering expertise in model and data science, helping to realise the scientific ambitions of ICAS;

- Providing technical computing expertise that enables the translation of ICAS research computing into exciting student education experiences;
- Developing and implementing new model codes for incorporation of new scientific process understanding into models, in collaboration with CEMAC and ICAS scientific experts;
- Implementing and evaluating coding updates for improving numerical efficiency or optimising models for new computer hardware and architectures, including the Met Office's Unified Model;
- Contributing technical computing expertise to the high-level training of researchers and students, development of funding proposals, new numerical computing initiatives, and scientific papers;
- Working with the Leeds Advanced Research Computing (ARC) team, Met Office and NCAS Computational Modelling Services (CMS) to ensure researchers meet stringent guidelines and policies associated with their code developments including contributing to model documentation;
- Maintaining effective coding documentation through the CEMAC Models and Data Wiki and other documentation to improve the efficiency with which new researchers learn to develop and exploit models, software and datasets;
- Undertaking continuing professional development.

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 Software Development Scientist you will have:

- A first degree (Bachelor's or equivalent) in an appropriate technical, scientific, or engineering discipline, ideally with a strong software engineering component;
- Proficiency in numerical analysis techniques and programming in languages such as FORTRAN, C, C++ and Python;
- A high level of proficiency in Unix-based high performance computing and parallel programming (OpenMP, MPI), including optimisation for these architectures;
- Experience and knowledge of numerical optimisation techniques;
- Excellent problem solving skills, with the ability to take possession of and provide solutions for complex problems in a multi-disciplinary team environment;



- Experience in working within a software life cycle (liaising with user needs, code design, code testing, source code repositories, version control);
- Ability to work both independently and within a team;
- Ability to work proactively to define, prioritise, organise and complete multiple assignments to meet deadlines;
- Excellent oral and written communication skills, including skills in preparing and making short presentations and documentation on computing topics.

You may also have:

- A PhD with a significant computational component, ideally in the geophysical sciences;
- Experience of working in a highly-rated academic research environment;
- Experience with the Met Office Unified Model system.

How to apply

You can apply for this role online; more guidance can be found on our How to Apply information. 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 Steve Arnold, CEMAC Director
Tel: +44 (0)113 343 7245
Email: S.Arnold@leeds.ac.uk

Additional information

Find out more about Athena Swan in the Faculty.

Find out more about our School.

Find out more about our Research and associated facilities.

Working at Leeds
You can find out more about our generous benefits package and more about what it is like to work at the University and live in the Leeds area on 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.