APPLY 41-2022

Research Software Engineer

INTEGRATED BIOSPHERE FUTURES (IBF) RESEARCH GROUP

The **IBF Research Group**, part of the IIASA **Biodiversity and Natural Resources (BNR) Program** is looking for a highly motivated individual to lead the design and implementation of an ambitious IT environment promoting its integrated modeling cluster deployment based on state of the art technologies, spanning large spatially explicit data management, workflow automatization, open and modular cloud-based deployment, web-based solutions for data and model sharing with the scientists, policy makers, businesses, and the wider public. Aside from having a strong technical focus, an affinity with science is of benefit to the holder of this position, as the successful candidate will be collaborating closely with the world largest team jointly developing sustainable solutions for land and water management.

BACKGROUND

The IBF Research Group adopts an integrated approach to sustainable land use and ecosystems modeling taking into account i) interactions between different economic sectors, including agriculture, forestry, bioenergy, and fisheries, ii) synergies and trade-offs between multiple societal objectives, including, but not limited to, green-house gas emissions and climate change mitigation, climate change impacts and adaptation, food security, sustainable nutrient and water management, and biodiversity, iii) across different spatial and temporal scales, going from pixel through the country level up to the global scale, and from annual to a hundred-year time horizon.

A core part of the research is based on the GLOBIOM model which is central to a growing modelers community supporting national and international decision makers around the world. GLOBIOM, in turn, is part of a large ecosystem of models, within and outside of IIASA, currently being consolidated into the new iBIOM modeling framework. The team owns significant high-throughput compute infrastructure for parallel model runs and leverages on-premises and cloud infrastructure for version control and automated testing.

THE POSITION

The successful candidate will lead the development and implementation of the technical infrastructure around the integrated modeling framework iBIOM, including data management solutions, operationalization of model containerization and orchestration, workflows automatization for deployment, testing, and professional visualization of data and model results for scientists and their stakeholders. Furthermore, the incumbent will lead project specific adaptations of the technical infrastructure, including data and model repositories, scenarios and data explorers, incl. dashboards.

MAIN TASKS

- Lead the design and implementation of the iBIOM technical infrastructure.

- Manage and further develop the technical infrastructure surrounding GLOBIOM and other team efforts.

- Create interactive web front ends (both for data access and model operation).

- Participate in fundraising for the IT infrastructure maintenance and development

- Contribute to ongoing research activities by implementing new features in scientific software in close collaboration with scientific staff.

- Set up and maintain relational databases, geospatial data stores, define data templates, and provide general support to data management.

- Provide user support, training, and guidance on the use of tools and best-practices in software development to IBF staff and collaborators.

- Assist in the design, development, and implementation of new tools and services in support of the team's research and community communication efforts, incl. documentation.

- Configure and manage cloud deployments (including interfaces between models and data stores).

- Containerize models and other workloads.

- Script tests and pipelines (unit/functional/integration tests, CI/CD pipelines, workflow pipelines, etc.,).

- In line with the team spirit that prevails at IIASA, the incumbent may occasionally work on other tasks assigned by their superiors, that might not be directly related to this appointment but where the post holder has relevant experience and skills, and/or a shortage of immediate personnel capabilities requires such.

QUALIFICATIONS

- Demonstrated ability to conceive, design, manage, and implement complex software development projects.

- Demonstrated ability to lead a team for software solutions development purposes.

- Experience in mentoring less experienced colleagues.

- Demonstrated ability to provide high quality software development.

- Preferably, the successful candidate will hold an MS, or equivalent degree in a field computer science and have a strong interest in scientific software development. Candidates with a background related to land use, economic modeling, or related fields, if experienced software practitioners, are also welcome to apply.

- Applicants should have hands-on experience with developing software and have good experience with one or more of the scientific computing ecosystems surrounding the Python, R, or Julia languages. Familiarity with GAMS, C/C++, or Java is a plus.

- Experience with version control systems

APPOINTMENT TERMS

The successful candidate should be available to take up the position as soon as possible (start date negotiable). We offer an initial fixed-term, full-time employment contract for one year, with the possibility for extension thereafter. Eligible applicants wishing to work part-time hours may be considered.

Duties will be carried out at the IIASA premises in Laxenburg, near Vienna in Austria (up to 100 days per year home office working within Austria possible).

The corresponding profile for this opportunity is S3 according to the IIASA Research Software Professionals Profiles. IIASA does however reserve the right to hire a research software professional with a lower profile, and at a corresponding lower salary than the minimum stated below, if the qualifications and professional experience of the selected candidate do not meet the criteria described in the profile adequately.

WE OFFER

A full-time (40 hours per week), gross annual salary of *minimum*

EUR 71,559.00 for S3 Research Software Engineers

The advertised salary is:

- Exempt from income tax in Austria.

- Negotiable, based on the qualifications, skills and

(Subversion/Git) is a must, and familiarity with the GitHub or GitLab platforms is desirable. Knowledge of test automation, CI/CD, containerization, and other dev-ops practices is an advantage, as is an affinity with web development and standards.

- Applicants should have the willingness and ability to work in an international multi-disciplinary team and be flexible and adaptable in responding to deadlines. Good written and verbal communication skills in English are essential.

experience of the selected individual.

- Subject to deductions for health insurance and/or social security.

- Not directly comparable with other employers in Austria, due to the unique legal status and privileges granted to IIASA.

- Subject to the principle of income aggregation (Progressionsvorbehalt in German).

IN ADDITION

- Educational subsidies for children of school age enrolled in private schools in Austria.

- A generous annual leave allowance.

- Moving and settlement allowances and paid home leave for employees in scientific and professional categories hired from international locations.

- Assistance for newcomers to Austria with visa, work and residency permit applications.

- Support finding accommodation in Austria.

Further details here.

About IIASA

IIASA is committed to a working environment that promotes equality, diversity, tolerance and inclusion within its workforce. This is reflected in our Core Values. We encourage qualified candidates from all religious, ethnic, and social backgrounds to apply. In the case that candidates are equally qualified, preference will be given to applicants from countries where IIASA has a Member Organization.

Further Information

For further information about this opportunity, please contact:

Mr. Michael Le Gohebel, Program and Project Officer, IBF Research Group

Dr. Petr Havlik IBF Research Group Leader

For general information, please contact: recruitment@iiasa.ac.at

Applications

To apply for this opportunity, you will need to provide the following documents in English:

- A cover letter outlining your motivation for and fit to the position

- A detailed Curriculum Vitae

- The names, addresses (including e-mail), and telephone numbers of two work-related reference givers.

- **Candidates are encouraged to include with their applications evidence of successful leadership in (scientific) software environment development; for instance, links to a GitHub profile and/or specific projects or pull requests; or references/testimony from collaborators.**

Deadline for receipt of applications: extended until filled

APPLY