APPLY 06-2024

Research Software Professional

The successful candidate will join a team of research software developers and closely collaborate with researchers across multiple disciplines in the IIASA Energy, Climate, and Environment (ECE) Program and their international partners

BACKGROUND

The IIASA Energy, Climate, and Environment (ECE) Program is one of the leading scientific research institutions in the domain of integrated assessment of climate change and the systems transition to implement the Sustainable Development Goals (SDGs). In addition to its own high-impact research, ECE provides a range of services to the broader research community.

The ECE program recently established the research theme **Scenario Services & Scientific Software**[1] supporting energy- and climate-related research in ECE and in the wider academic community. Researchers and research software professionals are developing several open-source tools to facilitate modeling, analysis and visualization of climate change mitigation scenarios. These tools and packages are implemented following best practices of collaborative scientific software development, seeking to foster open science and the implementation of the FAIR principles for data management.

As part of its mission, ECE hosts dozens of interactive scenario web applications and databases (aka Scenario Explorer). These databases form an integral part of the research infrastructure at ECE and in the wider integrated-assessment research community and they are also a key tool for dissemination of scientific insights and results. For an example of our work, visit the **AR6 Scenario Explorer**[2]: it makes accessible the quantitative scenario data underpinning the report by the *Intergovernmental Panel on Climate Change* (IPCC) on "Mitigation of Climate Change" (2022), the contribution of Working Group 3 to the *Sixth Assessment Report* (AR6). Another state-of-the-art tool is the **Climate Solutions Explorer**[3], which presents downscaled scenario data using interactive maps from the Horizon Europe project ENGAGE. Other tools widely used in the research community are the **MESSAGEix Integrated Assessment Modeling** framework[4] and the **Python package pyam** for scenario data analysis and visualization[5].

The software stack consists primarily of open-source Python packages for scenario processing and database management as well as three-tier web applications (Web UI, Java servlets, ORACLE/Postgres RDBMS). We use GitHub Actions and Jenkins for CI/CD, and we strive to adopt Agile software development practices in our daily work. IIASA supports continuous learning of its staff, facilitating formal trainings and informal sharing of best practices among research software professionals.

[1] https://software.ece.iiasa.ac.at

[2] https://data.ece.iiasa.ac.at/ar6

[3] https://www.climate-solutions-explorer.eu

[4] https://docs.messageix.org

MAIN TASKS AND RESPONSIBILITIES

- Develop web-based **graphical user interfaces** for analysis and visualization of integrated-assessment scenarios, including interactive infographics for non-expert audiences and dashboards for selection, diagnostics, and validation of scenario results. These new interfaces and tools will complement existing Python packages, which are aimed at expert users.

- Design web-based **interactive data visualization features**, in particular maps based on raster and vector data, to work natively within the existing Scenario Explorer infrastructure such that these new visualization tools can be used for dissemination of scenario results to both expert and non-expert audiences.

- Implement **data processing workflows** to transform research results such that they can easily be served via the web-based tools for data visualization and dissemination of results in close collaboration with the research community.

Beyond the above mentioned tasks, the successful candidate will also work on general activities of the **Scenario Services & Scientific Software** research theme, including:

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

- Provide support and guidance on best-practice of scientific software development and the use of tools developed in ECE to researchers at IIASA and collaborators in the wider community.

- Documentation of the software stack and all modules at high professional standards.

- 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 AND EXPERIENCE

- Preferably, the successful candidate will hold a BSc or MSc (or equivalent, e.g., DI_{FH}) in a field related to the natural sciences (energy, environment, climate, geography), data science, or computer science and software development.

- Good written and verbal communication skills in English are essential.

- A strong interest in scientific software development and hands-on experience with developing software, continuous integration practices, and the related tasks (dev-ops).

- Familiarity with one or several relevant tools and techniques used in ECE:
  - Infrastructure for spatial data (in particular geoserver)
  - Collaborative development and version control: GitHub
  - Databases: ORACLE, Postgres, spatial databases such as PostGIS

APPOINTMENT TERMS

The successful candidate should be available to take up the position as soon as possible in 2024. 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 successful candidate will be appointed in accordance with the IIASA research software professionals profiles.

WE OFFER

- The possibility to contribute to environmental sciences for sustainability and global wellbeing.

- Career development perspectives.

- An international atmosphere and pleasant working environment in a historic market town surrounded

- Dev-ops: Jenkins, Docker, Kubernetes

by green areas.

- An attractive salary which is exempt from income tax in Austria and negotiable, based on the qualifications, skills and experience of the selected individual and *at least* EUR 39,825.00 gross per annum (subject to deductions for health insurance and/or social security).

IIASA salaries are:

- 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).

OTHER BENEFITS

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

- A generous annual leave entitlement.

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

- The possibility to work up to 100 days per year in home office (within Austria).

- 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 IIASA 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:

Daniel Huppmann, Senior Research Scholar, ECE

For general information about working at IIASA, 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 reference givers.

- Candidates are encouraged to include with their applications evidence of successful contributions to development of open-source (scientific) software and/or of collaboration on multi-developer software projects; for instance, links to a GitHub profile and/or specific projects or pull requests; or references/testimony from collaborators.

Deadline for receipt of applications: until filled

APPLY