

APPLY 63-2022

Research Software Programmer Internship

The IIASA **Energy, Climate, and Environment (ECE) Program** is offering a three to six -month internship. The successful candidate will closely collaborate with research software professionals and researchers in the program as well as with their international partners.

BACKGROUND

The 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.

Researchers and research software engineers at ECE are managing a number of open-source tools to facilitate modeling and analysis of climate change mitigation scenarios. These tools and packages are developed in an open, collaborative process implementing best practices of scientific software development, seeking to foster open science and the implementation of the FAIR principles.

As part of its mission, ECE hosts dozens of interactive scenario web databases (aka Scenario Explorer). These databases form an integral part of the infrastructure for research conducted at ECE and in the wider integrated-assessment research community and they are also a key tool for dissemination of scientific insights and results. The databases are used in particular for assessments by the *Intergovernmental Panel on Climate Change (IPCC)* and projects with research partners in the *Integrated Assessment Modeling Consortium (IAMC)* funded by the EU's Horizon 2020/Horizon Europe programs. For an example of our work, visit the **AR6 Scenario Explorer**^[1], which is the most prominent instance of this service currently deployed; it makes accessible the quantitative scenario data underpinning the IPCC's report "Mitigation of Climate Change", the contribution of Working Group 3 to the *Sixth Assessment Report (AR6)*.

Further examples of a highly visible tools in the research community are the **MESSAGEix Integrated Assessment Modeling** framework^[2] and the **Python package pyam** for scenario data analysis and visualization^[3].

The successful candidate will join a team of research software engineers and software developers working with researchers at ECE and collaborating institutions on further developing and continuously improving these tools to support energy- and climate-related research in ECE and in the wider academic community. An interest in the scientific content of the software tools – climate change and energy transition research – will help communication within the multi-disciplinary teams and developing a deeper understanding of the user needs.

[1] <https://data.ece.iiasa.ac.at/ar6>

[2] <https://docs.messageix.org>

[3] <https://pyam-iamc.readthedocs.io/>

THE POSITION

The successful candidate will closely collaborate with researchers from the IIASA ECE Program and their international partners in addressing the following tasks:

- Implement the Python interface for a new version of the **ixmp** package for database management to support scenario analysis and energy-systems and integrated-assessment modeling.
- Implement new features in the new scenario data infrastructure (**Scenario Explorer** and related software stack) to support its use for research and science communication.
- 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.

Applicants 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.

QUALIFICATIONS

- 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.
- Preferably, the successful candidate will be enrolled in a degree program towards a MSc (or equivalent, e.g., DI_{Fit}) in a field related to energy economics, environmental science, or computer science and software development, and have a strong interest in scientific software development.
- Hands-on experience with developing software, continuous integration practices, and the related tasks (dev-ops).
- Familiarity with relevant tools and techniques used in ECE (Python, RDBMS, docker) and/or keen on extending their skill set.
- Hands-on experience with GitHub and virtualization would be an asset.

APPOINTMENT TERMS

The selected candidate should be available to take up the position as soon as possible.

WE OFFER

A three to six-month internship, to be carried out at the IIASA premises in Laxenburg, near Vienna in Austria. Full-time or part-time working hours possible.

A monthly salary based on an annual gross salary of EUR 15,000.00 which is exempt from income tax in Austria.

The advertised salary is:

- Non-negotiable.
- Subject to deductions for health insurance.

IIASA does not provide housing or additional funding for housing. Interns do not qualify for moving, installation, or other allowances.

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:

[Dr. Volker Krey](#), Research Group Leader, IACC

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.

Applicants 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