

eScience Center Fellowship Programme 2022: Application Form

January 2022





REGISTRATION FORM (BASIC DATA)

1a. Details of the fellowship applicant

Surname, first name, title(s)	Girgin, Serkan, Dr. Ing. MSc
Email address	s.girgin@utwente.nl
Institute	University of Twente
Department	Faculty of Geo-Information Science and Earth Observation
Section	Center of Expertise in Big Geodata Science
Address	Hengelosestraat 99
Postcode	7514 AE
City	Enschede
Tel	+31 53 489 5578

1b. What is your current occupation / career stage?

- PhD candidate
- Postdoctoral researcher
- Assistant professor
- Associate professor
- Professor
- Data steward
- Research software engineer
- Other, namely:

2a. Title of your proposed fellowship project

GEOnnect: Connecting eScience Center RSEs and ITC researchers for better environment and sustainability-related research software uptake and development

2b. Summary for the eScience Center website

Following its mission and vision, eScience Center develops research software in collaboration with researchers. Availability of research software is the crucial first step, but uptake by the research community is required to make it alive and sustainable. An efficient way to facilitate the uptake is to bring together the developers and potential users through hands-on training workshops, which allow researchers to learn the software directly from its developers. Likewise, the developers can get direct feedback from the domain experts, which can help them to improve their software. This project aims such a workshop series on environment and sustainability-related eScience Center research software for the researchers of the Faculty of Geo-Information Science and Earth Observation (ITC), which is a world-renown education and research institution in the field. Besides enabling the growth of the user communities by involving highly skilled researchers, the events will also support better collaboration between the institutions.



2c. In which of the four categories below does your project fit most closely?

Discipline	Rank
Environment and sustainability	1
Natural sciences and engineering	2
Life sciences	3
Social sciences and humanities	4



FELLOWSHIP PROJECT PLAN

3. Project plan

In line with its mission and vision, eScience Center develops research software in collaboration with researchers. Although availability is the crucial first step, uptake by the research community makes a research software alive and sustainable. Unfortunately, this is a challenge for many research software projects and it is not uncommon that software become idle quickly although significant effort and resources were spent for their development. An efficient and effective way to facilitate the uptake is to bring together the developers and potential users, so that the users can get hands-on training directly from the developers and voice their questions, struggles, and needs. This also allows the developers to get first-hand feedback from the users, which may help them to improve and further develop their software. Besides supporting the growth of the user community, such a direct contact may also facilitate further research collaboration between the parties.

This project aims to initiate such a collaboration between the Faculty of Geo-Information Science and Earth Observation (ITC) and eScience Center through a series of hands-on training workshops for the ITC researchers on environment and sustainability-related research software developed by the eScience Center. As a world-renowned education, research, and capacity development institution, ITC has a long history and experience in research software development. Therefore, the workshops will not only bring together the developers and potential users, but also two research software development communities enabling transfer of know-how.

The project will start with a kick-off meeting at ITC, during which eScience and ITC staff will get together and learn about the capabilities and recent activities. For the eScience Center the focus will be on the Environment and Sustainability sector, whereas all scientific departments will be presented for ITC. Following this overview, a series of short presentations will be provided by eScience and ITC staff on different research software developed by their teams, which preferably have demonstrated use cases. These presentations will allow eScience and ITC staff to better understand the know-how and capabilities of each other. Also, ITC staff will be informed on the research software for which hands-on training will be provided. The meeting will conclude with an open discussion session, during which the main challenges and research interests relevant to the presented research software will be discussed. The participants will be invited to fill-in a short survey to collect information on research interests, needs, and challenges in a structured manner. The cocktail afterwards will allow the participants to continue the discussion in an informal setting and establish connections.

Following the kick-off meeting, a planning meeting will be organized at eScience Center with the participation of the Fellow, the Environment and Sustainability Sector Head, and RSEs who will take part in the training activity. Considering the outcomes of the kick-off meeting and the survey, common interests and expectations will be discussed in detail, three research software to be covered in the training workshops will be decided, and project timeline will be finalized. The following eScience Center projects and related research software might be considered for the workshops (the list is not exhaustive and for information purposes only):

- [eWaterCycle II](#)
- [Eratosthenes](#)
- [MOSAIC](#)
- [eEcoLiDAR](#)
- [RECEIPT](#)
- [ESiWACE2](#)



Four training workshops will be organized at ITC, three of which will be on the selected eScience Center research software. Each workshop will be provided by an eScience Center RSE who was one of the core developers of the software, preferably the lead developer. In the first part of each workshop, the research software will be presented in detail, including its motivation, core features, and methods and algorithms implemented. A short demonstration, followed by a Q&A and discussion session will conclude this part. In the second part, the participants will practice the software by hands-on exercises. The exercises will aim to build a minimum, but complete use case incrementally, so that all steps required to use the software are practiced. The RSE will supervise the exercises and help the researchers when they encounter difficulties. Ideally a pair of RSEs will be better for this purpose, but this is not feasible due to limited time available for funding. The Fellow will support this task as much as possible. Each workshop will end with an evaluation session, during which the researchers will provide feedback about their experience with the software, including suggestions and recommendations for improvement. The last workshop will be about research software development best practices and will aim to improve digital skills of researchers, e.g., in building structured code repositories and enabling continuous integration. Such skills are currently underdeveloped for early career researchers. Therefore, this workshop will help to fill the gaps and facilitate better research software development at ITC.

Following the workshops, the participants will be asked to practice the use of the research software and learned skills, preferably as part of their on-going research and education activities. A closing meeting will be organized at ITC to provide an overview of the project to the interested parties, including the information on the uptake of the related research software by ITC researchers after the training workshops, improvements implemented by the RSEs based on the feedback provided during the activities, and lessons learned by both parties during the project. The meeting will be concluded with an open discussion session on future collaboration, including possible follow-up activities and research software development.

The project has the potential to have a positive impact on the state of the related eScience Center research software and to improve uptake by the academic and research communities as follows:

- The meetings, training workshops, and survey will help eScience Center RSEs to get first-hand feedback from potential users of their research software, most of which are experienced scientists. RSEs can significantly benefit from the feedback to adjust software according to user needs, improve usability aspects, correct issues, and develop further to enable features wanted by the users.
- The hands-on training workshops will directly increase the number of researchers familiar with the related research software. Given that most of the ITC staff are experienced in research software development, they may become active members of the communities of the relevant research software and can contribute to long-term sustainability and further development.
- Besides research, ITC is also recognized worldwide for its achievements in education and capacity development. With 70 years of history in international education, ITC has a worldwide community of over 20,000 alumni forming an extensive network. Familiarity of the ITC staff with eScience Center research software through the project may allow inclusion of these software to courses in BSc and MSc programmes, as well as short and online courses. This may result in a stable growth of the user communities of the related research software. It should be noted that alumni upon return to their home countries usually act as ambassadors in use of software tools; therefore, a snowball effect is par for the course.



- ITC researchers are keen to use innovative software to perform their research and it is likely that they will use the software to solve (global) environmental and societal challenges. The outcomes will be shared with the scientific community through scientific papers and conferences, and with the public through other communication channels (e.g., blog posts, media, social media). These outputs have the potential to provide additional visibility to the related research software, and act as case studies that can be taken as examples by other researchers.

I believe that I'm well situated to execute this project, because:

- I have 20+ years of research experience both in academic and research organizations, most of which involved development of research software. The software I have developed have been operationalized at the European Union level. Combined with my scientific background in environmental sciences, geospatial big data, and cloud computing, this expertise allows me to bridge researchers and software developers easily.
- Recently I have established the [Center of Expertise in Big Geodata Science](#) (CRIB), which required significant community building and support activities, besides R&D and managerial tasks. I set up an on-premises [geospatial computing platform](#), which currently serves 750+ users. Although the user support I have provided was a side activity, due to its extent I have been nominated for the [SURF Research Support Champion 2022](#). As part of community building activities, I publish [Big Geodata Newsletter](#), organize [Big Geodata Talks](#), and share information through [@BigGeodata](#). Overall, I have a respected position at ITC and recognition among our partners, which enables me to motivate my colleagues to get involved to the project activities.
- For about 18 months, I have been participating in the research collaboration of ITC and eScience Center on [large-scale distribute phenology analysis](#). Lead by Prof. Dr. Raul Zurita-Milla (ITC-GIP), the long-lasting collaboration had several phases to which different eScience Center RSEs were involved and (co)developed [Clustering Geo-data Cubes](#) research software. The collaboration allowed me to become acquainted with eScience Center RSEs and their working methods (e.g., focused sprints), which will enable me to facilitate bridging the connections.

4. Fellowship timeline

The following timeline is proposed for the project for the activities described in the project plan section:

Activity	2022							2023				
	06	07	08	09	10	11	12	01	02	03	04	05
Preparation												
Kick-off Meeting												
Planning Meeting												
Training Workshop 1												
Training Workshop 2												
Training Workshop 3												
Training Workshop 4												
Closing Meeting												



It is foreseen that some time will be required to organize the kick-off meeting, which requires contribution from different eScience and ITC staff. Hence, a preparation phase of two months is planned to communicate with related people and ensure their participation. Summer holiday period is taken into consideration. The kick-off meeting will be organized early in September 2022, before the 2022-2023 academic semester starts, so that ITC staff with education duties can more easily participate to the meeting. The academic calendar is also considered for the workshops, which will be organized in two different periods: one in October-December 2022 and another one in January-March 2023. The second half of December and the first half of January will be avoided. It is suggested not to have a long gap between the kick-off meeting and the first training workshop to keep the interest and motivation high. Still a proper planning and sufficient time between the announcement and the training will be necessary. Therefore, a suitable time could be mid-November, followed by the second workshop in one month. Third workshop could be organized at the end of January-beginning February, followed by the last workshop in one month. The exact dates of the workshops will be decided during the planning meeting based on the input from the kick-off meeting and availability of eScience Center staff.

Taking into consideration the travel of eScience Center staff for the meetings and workshops, the following event programmes are proposed:

Kick-off Meeting

13:00 – 13:10	Welcome and introduction of the project and workshop series
13:10 – 13:25	About eScience Center (with focus on Environment and Sustainability Sector)
13:25 – 13:30	Q&A about eScience Center
13:30 – 14:20	About ITC (individual presentations for 6 scientific departments + CRIB)
14:20 – 14:30	Q&A about ITC
14:30 – 14:45	Coffee break
14:45 – 15:30	eScience Center Research Software (4-5 presentations, including short Q&A)
15:30 – 16:15	ITC Research Software (4-5 presentations, including short Q&A)
16:15 – 16:45	Open discussion about research software needs and survey
16:45 – 17:30	Cocktail

Training Workshops

9:30 – 10:00	Welcome coffee
10:00 – 12:00	Introduction to the research software and short demonstration (including coffee break)
12:00 – 13:00	Lunch
13:00 – 16:00	Hands-on practice session (including coffee break)
16:00 – 16:30	Feedback and evaluation session

Closing Meeting

14:00 – 14:10	Welcome and summary of the project and workshop series
14:10 – 14:30	Overall evaluation and lessons learned by eScience Center
14:30 – 14:50	Overall evaluation and lessons learned by ITC
14:50 – 15:30	User stories
15:30 – 15:45	Coffee break
15:45 – 16:45	Open discussion about future collaboration
16:45 – 17:30	Cocktail



5. Fellowship budget specification

The project requires a personal budget of €3,000 + 36 hours of eScience Center expertise (“in-kind support”). The personal budget will be used completely for the organization of the meetings and workshops, including travel of eScience Center RSEs by train and catering (i.e., lunches and cocktails). eScience Center employee expertise time will be used for the hand-on teaching activities during the workshops. Kick-off and closing meetings are considered as (re)acquittance and networking events; therefore, the participation of eScience Center employees to these events are not counted as “expertise hours” (i.e., not included in 36 hours).

Detailed budget specification is as follows:

Cost Item	# Units	Unit Cost	Total Cost
Kick-off Meeting			
Travel of eScience staff (Train, 1 st class, Amsterdam-Enschede, return)	4	€84.50	€338.00
Snacks and drinks (cocktail, per person)	40	€7.50	€300.00
Coffee/tea (per pot)	6	€5.00	€30.00
Planning Meeting			
Travel of S. Girgin (Train, 1 st class, Enschede-Amsterdam, return)	1	€84.50	€84.50
Training Workshops (4 events)			
Preparation time of the eScience staff (per event)	4	3h	12h
Hands-on training time of the eScience staff (per event)	4	6h	24h
Travel of eScience staff (Train, 1 st class, Amsterdam-Enschede, return)	4	€84.50	€338.00
Lunch (pack, per person)	80	€12.50	€1000.00
Coffee/tea (3 times per event) (per pot)	48	€5.00	€240.00
Closing Meeting			
Travel of eScience staff (Train, 1 st class, Amsterdam-Enschede, return)	4	€84.50	€338.00
Snacks and drinks (cocktail, per person)	40	€7.50	€300.00
Coffee/tea (per pot)	6	€5.00	€30.00
GRAND TOTAL			36h €2998.50



ADMINISTRATIVE DETAILS

6. Statements by the applicant

The eScience Center strictly applies the General Data Protection Regulation (GDPR), the EU regulation aimed at strengthening data protection for all individuals within the EU (see www.eugdpr.org). In the Netherlands the regulation is implemented as the 'Algemene Verordening Gegevensbescherming (AVG)'. Applicants must strictly apply these rules and regulations, as well as the principles, in as much as these are applicable to the proposed work.

Applicants are asked to endorse and follow the Netherlands eScience Center Rules towards Publishing, Licensing, and Intellectual Property (available at www.esciencecenter.nl). For alternative IP agreements, contact the eScience Center before proposal submission.

- I endorse and follow the rules and regulations as laid out in the 'Algemene Verordening Gegevensbescherming (AVG), as well as the underlying principles (GDPR).
- I endorse and follow the eScience Center Rules towards Publishing, Licensing, and IP.
- I have completed this form truthfully.

Name: Serkan Girgin

Place: Enschede

Date: 11/04/2022



OTHER INFORMATION (OPTIONAL)

7a. Which of the following disciplines are relevant to the research / work you do on a daily basis?

- Agricultural or Environmental Sciences
- Biomedical or Health Sciences
- Chemistry
- Civil, Mechanical, Chemical, or Nuclear Engineering
- Computer Science or Electrical Engineering
- Earth Sciences
- Economics or Business
- Genetics, Genomics, or Bioinformatics
- High Performance Computing
- Humanities
- Library and Information Sciences
- Life Sciences
- Mathematics or Statistics
- Medicine
- Organismal Biology
- Physical Sciences
- Planetary Sciences
- Psychology or Neuroscience
- Social Sciences
- Space Sciences
- Research Support

7b. What gender do you identify as?

- Female
- Male
- Non-binary
- Prefer not to say

7c. In which country did you complete the majority of your education?

Turkey

7d. What is your nationality?

Turkish

7e. Your GitHub, Twitter, and / or LinkedIn accounts:

<https://www.linkedin.com/in/serkan-girgin>

<https://github.com/girgink>

<https://github.com/ITC-CRIB>

<https://twitter.com/girgink>

<https://twitter.com/BigGeodata>