Internship in User Support & Climate Services Division

Internship on Earth Observation Data Formats: Comparison of cloud-optimized data formats and their performance for different Copernicus and EUMETSAT mission data use cases

With the growing fleet of satellites operated by EUMETSAT, the data volume of Earth Observation data available to user is growing. To ensure that more data also bring more value to the end user and society, it is important to make the large amounts of data usable. Cloud-optimized data formats, such as cloud-optimized GeoTIFF and Zarr are one approach to make data more accessible for users in large volumes. Cloud-optimized data formats are especially relevant for applications. such as machine learning and climate analyses, employing large amounts of data over long time series.

The applications will be deployed on two of EUMETSATS cloud-based infrastructures, in particular WEkEO and the European Weather Cloud (EWC). These platforms allow the full exploitation of cloud-optimized formats.

The goal of the internship would be to assess the usability of different cloud-optimized formats for EUMETSAT and Copernicusdata for one sample application, such as time series analysis or machine learning application.

Duties

- Perform research in new trends in cloud-optimized data formats for Earth Observation data;
- Systematically compare data formats and frameworks based on existing works and applications;
- Familiarise with the Copernicus and EUMETSAT data and data application areas;
- Familiarise with the Copernicus and EUMETSAT data access
- Select and implement an application use case to benchmark different cloud-optimized data formats against each other. The application may be for example to detect selected Earth System Feature (e.g. Algae Bloom) from satellite data The application workflow and created data will be hosted on the cloud platforms WEkEO and the EWC;
- Create a Jupyter

LOCATION

Darmstadt, Germany

QUALIFICATIONS

The internships are open to bachelor and master students with mandatory internship requirements in relevant disciplines such as Computer Science, Earth System Science, Remote Sensing, Geoinformatics, Geography.

LANGUAGES

The official languages of EUMETSAT are English and French. It is necessary to be able to work effectively in English.

DEADLINE

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methods;
- Create a cloud-optimized data cube for a selected dataset;

Notebook and further suitable documentation to showcase the results;
- In addition, support the EUMETSAT WEkEO and EWC team in the day-to-day activities.

Skills and Experience

- Have the ability to work effectively in English;
- Be computer literate;
- Be intrinsically motivated and curious about the internship subject;
- Be able to work independently and collaboratively;
- Have the ability to take the initiative in researching ideas;
- Have the ability to collect, collate, conceptualize and present information clearly.

Additional specific requirements:

- Programming experience, preferably in Python;
- Configuration and usage of virtual cloud computing environments.

Additional specific requirements are considered an advantage:

- Knowledge in EO data or Earth Sciences;
- Experience with machine learning (ML);
- Knowledge in other general purpose programming languages e.g. R;
- Relevant project or work experience in a technical field through class projects, clubs or internships;
- Experience writing code and contributing to open source projects.

Employment Conditions

Length of internship: **3 months**
Anticipated start date: **Q2 2026**

The internship will require a non-disclosure agreement and potentially a basic background check for the intern, due to the sensitivity of the provided information.

No salary is paid to interns who are still in studies, however a daily allowance and contribution to travel / accommodation costs may be provided.

As of 1 January 2026, interns may be granted a daily allowance of EUR 25 per day, relocation cost reimbursement of up to EUR 400, and accommodation cost reimbursement of up to EUR 1000 per month.

Interns are responsible for providing their own health and accident insurance and for finding their own accommodation in Darmstadt.

Consideration may also be given if the internship is not a mandatory part of curriculum, for a

maximum duration of three months.

EUMETSAT is committed to providing an equal opportunities work environment for men and women.
Please note that only nationals of EUMETSAT Member States may apply. The EUMETSAT Convention requires that Staff shall be recruited on the basis of their qualifications, account being taken of the international character of EUMETSAT.

About EUMETSAT

EUMETSAT is Europe's meteorological satellite agency. Its role is to establish and operate meteorological satellites to monitor the weather and climate from space - 24 hours a day, 365 days a year. This information is supplied to the National Meteorological Services of the organisation's Member States in Europe, as well as other users worldwide.

EUMETSAT also operates several Copernicus missions on behalf of the European Union and provide data services to the Copernicus marine and atmospheric services and their users.

As an intergovernmental European Organisation, EUMETSAT has 30 Member States (Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, The Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.)

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