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Remote Sensing Engineer and Scientific Data Analyst

Hiring organization
WGS Workgroup Solutions GmbH

Employment Type
Full-time, Part-time

Job Location
Remote work possible

Date posted
February 7, 2024

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Description

WGS Workgroup Solutions GmbH is seeking for a Remote Sensing Expert and Scientific Data Analyst to join our Service Team for our client, EUMETSAT. The service will primarily be provided off-site (remote working), with occasional requests for travel to and from Darmstadt for specific activities.

Responsibilities

The responsibilities of this role include managing, coordinating, and enhancing fire product monitoring and validation methodologies. This entails developing software and utilizing these tools to conduct scientific validation campaigns against various relevant data sources. Additionally, the role involves participating in opportunistic campaigns when necessary.

The work entails four key activities:

Activity 1: Conducting a scientific review and analysis of relevant fire product retrieval algorithms (e.g. MSG, GOES, HIMAWARI-8, MODIS, VIIRS) proposed across GEO & LEO space-borne sensors as well as Scientific Framework for FIR Activities the latest operational processors led by EUMETSAT (MSG & MTG FIR, and OFRapCS3), along with associated validation techniques.

Activity 2: Evolving, prototyping, and developing new functionalities while maintaining the quality of the FIR-MVT product monitoring tool. This includes implementing new validation methodologies with the data sets (e.g., active fire detection, but also the FRP computation for all types of FRP variables, FRP uncertainty, TCWV correction, confidence classes, all diagnostic quality indicators & flags) derived from Activities 3 and/or 4.

Activity 3: Conducting comprehensive scientific product validation and possible environment conditions (e.g. night vs. day times, inland vs. coast or sea, latitude & land surface type, fire strength, FOV surface area) using FIR-MVT and identifying and proposing scientific improvements and new validation methodologies with with appropriate reference instruments and datasets (e.g. MODIS, VIIRS, SEVIRI, air borne data) for FIR-MVT.

Activity 4: Engaging in scientific development and/or evolution of EUM fire retrieval algorithms, as well as the scientific development (e.g. developing prototype using all the documentation such as ATBD, Detailed Processing Model, user manual, format specification, validation reports via GitLab) of new validation methodologies for FIR-MVT.

Qualifications

The Key Person shall have the following experience and background:

- A university degree in a relevant technical discipline (i.e. Remote Sensing Engineer , Environmental engineering, Software engineering, Data Analyst etc.) or the equivalent work experience,

- At least 2 years' experience as a Remote sensing expert,
- Demonstrated skills in scientific data analysis and/or scientific software development
- Remote-sensing: Experience in scientific analysis, especially on remote sensing of fire detection from space, including the experience in developing algorithms
- Fires and biomass burning: Advanced knowledge on biomass burning parameters, methodologies and retrieval techniques,
- Excellent knowledge and experience on radiative transfer in the atmosphere, including the use of radiative transfer model
- Well experience on the validation of fire parameters derived from spaceborne sensors through validation campaigns (e.g. aerial) and cross-comparisons with relevant satellite products
- Experience with the development of modular, clearly readable and adaptable scientific software is required, including the configuration control of the developed software
- Demonstrable high-level skills in Python programming language
- Demonstrated usage of most common Python modules in scientific computing, e.g. numpy, scipy, dask, xarray, pandas, matplotlib, cartopy, etc
- Knowledge of Pytroll and vispy packages would be an advantage
- Experience in utilizing the GPU for intense processing tasks is desirable
- Data formats: Well knowledge of in reading and handling data in different typical earth observation formats, e.g. netCDF, HDF5, ASCII, GRIB, BUFR
- Experience on the visualization of remote sensing data using specific tools or programming languages, preferably Python
- Knowledge of using source code control systems such as GitLab,
- To have a systematic approach to work with the ability to plan their work and to cope with tight schedules and multiple tasks,
- The ability to work effectively under pressure and to manage complex tasks with minimum supervision,
- Very good interpersonal, communication and reporting skills and an ability to apply these to the interactions especially through scientific peer-review papers, product validation reports with a focus on operational scientific maturity, international working groups and workshops related to fire detection and biomass burning
- The ability to speak fluency in English (spoken and written),

Contacts

Interested applicants should submit their CV and Cover Letter in **Word** (*.docx) or in **PDF** (*.pdf) format from the website or by emailing the WGS recruitment team at ***vacancies@workgroup-solutions.com*** before **22.02.2024**