

The Assimila Data Cube interfaces expansion– improving user experience

Code: 21/54

Company: Assimila Ltd

Location: Reading, UK / remote

Company Description:

Assimila is a specialist Earth observation applications development and consultancy SME based in Reading. We work with clients to identify how their needs for environmental information can be met using Earth Observation (EO) data. We work with Universities in the UK and abroad to incorporate the latest research into our work. We take a physical approach to EO data interpretation, using radiative transfer modelling and data assimilation techniques to derive quantitative information describing the land surface and its vegetation cover. We also make extensive use of meteorological and climate data, integrating it with EO data and models.

One of our main applications areas is the generation of Analysis Ready Data to allow the continuous assessment of land surface processes. We use extensively Sentinel-1 and Sentinel-2 data to generate ARDs for different ecosystems in the world from coffee plantations in Colombia and Indonesia to the agricultural areas in the UK. The Assimila DataCube is the core data service provider for several of our applications and continuous improvement is an ongoing activity.

Project Description:

Data Cubes are becoming an increasingly popular way to provide sophisticated data storage for geospatial data. Assimila has developed a Data Cube to download, store and provide efficient access to Earth Observation and other climate reanalysis data. This technology is core to our work and provides input data to the many projects we work on, such as the PRISE (Pest Risk Information Service) project that uses this data to model agricultural pest risk in Sub-Saharan Africa, our Climate Risk Disclosure framework.

The Data Cube is built in Python, but many of our users in these sectors do not have any experience with programming and may find it difficult to fully adopt the system we have produced. We recognise the need to bridge this gap between our Data Cube and the user's expertise, and this internship will achieve just that.

The successful applicant will work with DataCube developers and scientist to improve existing APIs. The DataCube REST API currently serves the data in JSON/GeoJSON formats, additional output formats will be generated as well as dynamic querying of different products. Our existing Jupyter Notebooks will be revamped to allow even more interactivity to improve user

experience. The QGIS plugin will be enhanced to allow data visualisation in different cartographic projections.

The work will include compiling requirements, designing, coding and testing each portal, and ultimately deploying for users to adopt. All tasks will involve some software development in Python and JavaScript as well as data visualisation and data management.

Applicant Specification:

This placement will suit a student or recent graduate who has wishes to gain further experience in Earth observation data processing as well as software development. Academic: Studying for or completed a degree in computing, mathematics or physical science or geography with some experience in software development.

Minimum Requirements:

- Software development experience in Python.
- Willingness to learn and apply new skills.
- Able to work independently.

Preferred Additional Requirements:

- Development of REST APIs
- Interactive Jupyter Notebooks
- Anaconda Python distribution

Further details:

8 weeks minimum fixed term contract to be agreed with successful candidate. Virtual Induction Event to be held on 21 June 2021. Ideally to complete before the start of the next academic year. Salary is £1,500 per calendar month gross.

Closing Date for Applications: 5pm Friday 11 June 2021

Applications should be made through the online form on the Satellite Applications Catapult website before the closing date.

<https://sa.catapult.org.uk/work-with-us/space-placements-industry-spin/>

Please note that elements of the form left incomplete will be deemed to render the application ineligible. They will be checked for eligibility and forwarded to the employer. Email applications made to the Satellite Applications Catapult, UK Space Agency, or host organisations will not be processed.