

Develop visualisation portals for a Data Cube over Sub-Saharan Africa

Code: 19/37

Company: Assimila Ltd

Location: Reading Enterprise Centre, Reading, UK

Company Description:

Assimila is a specialist Earth observation applications development and consultancy SME based in Reading developing practical solutions for environmental information 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 and making extensive use of meteorological data, integrating it with EO data and models.

Our main application areas are agricultural monitoring and crop pests and diseases. We work closely with a number of academic partners in the UK as well as project partners in China, Ghana, Kenya Zambia and Malawi.

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 agro-meteorological data. This technology is core to our work and provides input data to the many projects we work on, including insurance applications and the PRISE (Pest Risk Information Service) project that uses this data to model agricultural pest risk in Sub-Saharan Africa, which was featured on BBC News (<https://www.bbc.co.uk/news/science-environment-46370601>, <https://www.gov.uk/government/news/uk-aid-supporting-more-than-18-million-farmers-with-plant-doctors-and-new-satellite-pest-forecasts>)

The Data Cube has a Python API, but many of our users 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 Assimila developers to build 3 different visualisation portals for the PRISE Data Cube, to allow users to request data without having to code themselves. Each portal will request just a few simple parameters from the user (location, date range, product required) and will subsequently process this request 'behind-the-scenes' before returning the data to the user. The three options include the development of a QGIS Plugin, a cross-platform GUI built with Qt Designer and a Jupyter Notebook with integrated widgets that can be served online. The work will include compiling requirements, designing, coding and testing each portal, and ultimately deploying for users to adopt.

Applicant Specification:

This placement will suit a student or recent graduate who has wishes to gain further experience of in software development as well as an understanding of the wider uses of Earth Observation data.

The applicant shall be studying for or completed a degree in computing, mathematics or physical science.

Minimum Requirements:

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

Preferred Additional Requirements:

Knowledge of or experience with the following would be advantageous:

- Earth Observation/geospatial data
- GIS/QGIS
- Qt Designer
- Anaconda

Further details:

8 weeks minimum fixed term contract to be agreed with successful candidate but nominally with a start date around 17th June 2019 to attend the SPIN Induction day at the Satellite Applications Catapult, and completion before 20th September for the Showcase the following week. Salary is £1,500 per calendar month gross.

Closing Date for Applications: 5pm on Friday 17 May

Applications should be made through the online form attaching a CV, before the closing date. 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.