

## Set up a test Data Cube within a Linux environment

**Code:** 19/24

**Company:** Deimos Space UK Ltd.

**Location:** Harwell Campus, Oxfordshire

### **Company Description:**

Deimos Space UK Ltd is a wholly owned subsidiary of Elecnor Deimos created in 2013 to address the UK and UK-export market for space systems, services and applications.

Elecnor Deimos has extensive experience in aerospace activities; we are involved in most European Space Agency programmes, including Science, exploration, Earth observation, satellite navigation, launchers and human space flight.

Deimos Space UK is located on the Harwell Oxford campus, and offers expertise in the following areas:

- Flight Systems
- Ground Systems
- Space Situational Awareness
- Satellite Navigation
- Applications & Services

The Deimos Space UK commercial R&D portfolio covers diverse satellite applications from smart cities to precision farming and marine operations. The company employs around 20 people in the UK and is planning to recruit several more in 2019.

Our knowledge of satellites, data systems and location-based services puts the company in a unique position when developing satellite applications. Future target markets for new applications of Earth Observation data based on Deep Learning include agronomy/environment, urban mapping and coastal monitoring.

### **Project Description:**

Data Cubes are becoming an increasingly important part of many project's technology toolset; they allow large volumes of data to be manipulated, sliced and diced in an efficient manner and enable temporal analysis to be undertaken. We have some previous experience in utilising satellite imagery within the Open Data Cube schema, however we are looking for an intern to assist in adapting this for our internal project needs.

The intern will be supporting this project to:

- Create a test Data Cube for Deimos Space UK
- Assess the utility of it as an addition to our current agricultural services
- They will be asked to set up their own test data cube within a Linux environment. They will be working with large satellite datasets from various sensors and will be given template scripts that are associated with the Open Data Cube but will need previous python and ideally yaml experience in order to develop the technology further, however they will receive guidance as necessary.

The student will help to develop a tool which will be used to create new services in precision farming and forestry monitoring (to prevent deforestation and help reforestation). The tool is likely to be deployed in an operational system in Africa.

The student will be working as part of a friendly, small Earth Observation Applications team comprising of around 7 people within Deimos Space UK and which has been operational since the Deimos Space UK subsidiary was created. Most have backgrounds in geography, remote sensing, machine learning, maths, software engineering and GIS.

The successful applicant will gain industry experience in the space sector and stronger skills in linux, python programming and yaml in an industry setting.

#### **Applicant Specification:**

The applicant will hold (or be near to completing) a degree in a scientific subject with an emphasis on data science, programming or geography with an interest in the space industry or in satellite imagery.

All applicants are encouraged to apply even if they only meet part of the criteria. We look forward to welcoming you!

#### **Minimum Requirements:**

- Experience with geographic data formats, projections, GIS software
- Experience in Python programming or another programming language
- Experience in Linux

#### **Preferred Additional Requirements:**

- Masters in GIS/Software Engineering or similar
- Familiarity with yaml, netCDF or directly with datacubes
- Familiarity with database structures and operations (e.g. Postgres, Oracle spatial, SQL etc.)
- Experience working with large satellite and drone datasets



**Further details:**

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

**Closing Date for Applications: 5pm on Monday 8 April 2019**

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.