

## **Project 18/18 - EO SPINtern**

### **Evaluating the Satellite Earth Observation in a compute-abundant world: an evaluation of Geospatial Data Analysis Platforms**

The Satellite Applications Catapult is a not-for-profit company and one of a network of centres established by Innovate UK to accelerate the take up of emerging technologies. The Catapult is transforming the way the world uses satellite technology, enabling new business and improving people's lives. We are accelerating the growth of the UK space sector by: raising awareness and increasing demand for satellite-enabled services; making space technology more accessible and relevant; and helping businesses, entrepreneurs and innovators to overcome challenges and bring new products and services to market.

Working around the globe, the Catapult is bringing together multi-disciplinary and technical entities from government, industry and academic to deliver new innovative ideas and solutions for a variety of markets including agriculture, mining, transport, government services and maritime.

The Catapult is looking for an enthusiastic and skilled student to evaluate how maturing scalable geospatial platforms, such as [Google Earth Engine](#) and the [Open Data Cube Initiative](#), that enable ready manipulation of entire satellite archives, impact upon Catapult market programmes and the wider geospatial community.

The successful student will work across multi-disciplinary teams at the Catapult, UK and colleagues at NASA, US upon frontier Earth Observation concepts. They have the opportunity to collaborate with international stakeholders at NASA within the context of activities being directed by the Committee for Earth Observation Satellites ([CEOS](#)).

#### **Project Description**

To date the international Earth observation community has failed to come to close to servicing the total addressable market. This failure in delivery has been associated to a number blockers including, but not limited to:

Access to Scalable compute – EO data is the world's third largest contributor of data

Automated scalable analysis – The true value of the data can only be unlocked through intelligent analytics

Visualisation/ information delivery – providing tailored intuitive and powerful visualisation

Emerging geospatial platforms exploiting 'infinitely' scaleable computing resources are changing the way in which Earth observation data is being manipulated to create novel applications across unexplored markets.

The successful candidate will work across the Catapult's Earth Observation and Geospatial Systems and Solutions technical domains. They shall also collaborate with key stakeholders at NASA, including a student undertaking an internship under a similar programme as SPIN.

Activities within the role relate to technically appraising the suitability of the various open source geospatial platforms (i.e. Google Earth Engine and Open Data Cube Initiative) for developing and

delivering internationally relevant solutions and applications in support of the Catapult-NASA strategic programmes.

**Specific activities will include:**

Working with Catapult programme heads and NASA stakeholders to define market centred test scenarios based upon programme strategic goals

Implementation of leading scientific techniques with available prominent geospatial platforms

Technical appraisal of the implications of these platforms upon Catapult-NASA areas of strategic import and geospatial international community.

**Applicant Specification**

Through working in a very dynamic and diverse environment within the Catapult and as part of the Earth Observation and Geospatial Systems and Solutions Teams the successful candidate will gain a variety of soft and technical skills. This are expected to include:

Technical:

- Familiarisation with GIS and image analysis tools stacks
- Familiarisation with a variety of optical and SAR EO datasets
- Access to the latest geospatial tools
- An understanding of the latest EO and geospatial developments shaping industry
- Understanding of key market problems the Catapult is working with industry to address

Soft:

- User centred design and requirements gathering
- Communication skills of dealing with a diverse set of technical, operational and sales stakeholders, including with international partners
- Project management

**Minimum Requirements**

Applicants will need to have an understanding of EO data, have computing skill, be able to critically evaluate problems, suggest solutions and show initiative in a supervised R&D project.

Experience in one or more of the following areas: IT, mathematics, remote sensing and GIS

**Preferred Additional Requirements**

Knowledge/ experience of one of the Catapult Programme/ market areas would be advantageous

Target courses: IT, Remote Sensing, GIS, Geography, Physics, Engineering, Mathematics and other similar courses

**Closing Date**

Monday 14 May

**Interviews**

Week commencing 21 May

**Further Details**

8 weeks fixed term contract to be agreed with successful candidate but nominally with a start date around 18 June which is also the SPIN Induction day at Harwell. Salary is £1,500 per calendar month.

Apply on the website: <https://sa.catapult.org.uk/people/space-placements-industry-spin/>