Everyone is affected by the work that Defra does. We deal with a vast range of issues that profoundly impact on people’s lives. We are responsible for England’s environment, our countryside and rural economy, the food and farming sectors and have lead responsibility for protection from a wide range of natural threats and hazards.

This is an exciting period to work in Defra. We have a significant international and European agenda, with as much as 80% of our work impacting across borders. And, further to the vote to leave the EU, we will need to communicate with all of Defra’s sectors and stakeholders, along with the wider public, to shape plans that will deliver genuine and lasting change.

As the Defra paying agency for the agriculture, food and environmental subsidy schemes in England, Rural Payments Agency make payments to farmers, traders and land managers. We manage over 40 schemes and undertake a range of enforcement inspections across the environment and food sectors to ensure we have a healthy rural economy and strong rural communities. We pay out over £2 billion each year to support a thriving farming and food sector. You can find more information on what the Rural Payments Agency does on www.gov.uk.

As a data scientist or GI professional within the Defra group, you will use a wealth of technology and data for surveillance, geo-intelligence gathering and topographic mapping of the natural environment and rural landscape. You will be part of the Geographic Information Technical Unit that is responsible for overseeing and delivering a range of geomatics activities such as earth observation, data-collection, machine learning, spatial analytics and designing enterprise geospatial information products and solutions.

We are looking to recruit a talented, and dedicated individual who is looking for a career in central government. This outstanding opportunity is directed towards data scientists with an interest in earth
observation, and a keen interest in working within a fast-paced, dynamic and motivated team environment. Successful applicants will be presented with a unique opportunity to work, develop and grow their skills within a geo-centric organisation.

It’s an excellent opportunity to get involved in strategic programmes and business critical initiatives within central government.

We already use machine learning within our operational business processes. So working with our existing team in Reading, you work on maintaining, developing and exploiting the use of machine learning within enterprise scale business process. You will get experience working with different teams across the agency and wider government, delivering projects, working with our supply chain and working in an exciting fast growing area of data science and earth observation.

**Key tasks include:**

- Be the lead for crop and land cover classification using Artificial Intelligence (AI), Machine learning (ML) and Remote Sensing techniques.
- Overseeing and assuring the supply chain that undertakes national remote surveillance and AI/ML activities on behalf of Defra/RPA.
- Learn and implement new data science tools and techniques within the geospatial arena (This could include, for example, Deep learning for land change detection, machine learning for crop/vegetation classification, building interactive dashboards, spatial analysis of complex structures)
- Be proactive in looking for opportunities to utilise your data science skills on existing and new data to benefit Defra and RPA
- Work in an ‘agile’ manner e.g. work closely with your geospatial colleagues and subject matter experts in ‘data labs’ to develop and deliver solutions iteratively
- Act as a consultant to others on how to exploit our data, building capability throughout the analytical community
- Champion the use of Data Science in the geospatial arena throughout Defra and RPA

You will be given the opportunity to lead on projects across various high priority areas across Defra/RPA. We prioritise which projects we take on to ensure that they are both impactful and innovative.

You will collaborate with other Government Department’s Geospatial Analysts and Data Scientists to share our expertise and modernise the way we work.

A significant proportion of the role will be spent identifying, developing and delivering operational projects. However, the post holder will have ample time (roughly 20%) to pursue R&D and training opportunities, a key aspect of the team’s way of working.

We’re keen that you come with ideas for possible future projects, and will give you the scope to
investigate this for yourself. However you’ll also need to be able to recognise when an approach is not working, and be confident enough to stop development (“fail fast”).

You’ll be required to play a role in championing Data Science, helping others and building the community.

**Person specification**

**Essential Experience:**

- Coding experience (e.g. R, Python, SQL, SAS)
- Knowledge in machine learning algorithms and advanced statistical modelling (Random Forest Classifier, Tensorflow, GDAL)
- Have a strong geographical knowledge and an interest in spatial data analytics.
- Evidence of successful delivery of insight, tools or data products
- Experience creating and managing large datasets efficiently
- Knowledge in location-related studies, conference presentations, academic papers or other indicators of research proficiency in industry-grade location
- Strong written & verbal communication skills, including the ability to explain complex concepts to a non-technical audience
- Ability to build relationships, and influence customers

**Qualifications**

Degree in Computer Science, Engineering, Statistics or Geospatial related field.

[Apply](https://www.civilservicejobs.service.gov.uk/csr/index.cgi?SID=Y3NvdXJjZT1jc2ZzZWFyY2gmcGFnZWNsYXNzPUpyYmNmmam9ibGlzdf92aWV3X3ZhYz0xNjMzQwJm93bmVydHlwZT1mYWlyJmNlYXJjaF9zbGljZV9jdXJyZW50PTEm3duZXIx9NTA3MDAwMCZ1c2Vyc2VhcmNoY29udGV4dD03OTgzODIyMCZwYWdlYWN0aW9uPXZpZXd2YWNieWpvYmxpc3QmcmVxc2lnPTE1NjA4NTA3NTgtMTJmNWYwNzUxN2ZmYmZiNzl4NGY5YzA3NjViMzRjZTY2MjMmY0ZAZ==)