
Global Witness Data Scientist TINDSG-002

#machinelearning #datastudygroup

About the Organisation

At [Global Witness](#) our goal is a more sustainable, just and equal planet. We want forests and biodiversity to thrive, fossil fuels to stay in the ground and corporations to prioritise the interests of people and the planet.

Role Description and Responsibilities

The goal of this internship project is to build a machine-learning classification algorithm for accurately detecting the presence of a specific type of unregulated and destructive mining of critical minerals we are investigating using high-resolution (Planet) and medium resolution satellite imagery (Sentinel and Landsat). More information on the specific type of mining will be shared during the interview.

This will be an entirely new project from a technical perspective, but will feed into an existing strand of research on critical minerals.

This classification algorithm will be applied to historic satellite imagery over large areas to detect the scale of mining in different areas and its occurrence across time.

Global Witness has attempted a related project in the past looking at a different type of mining (see this [post](#)), but this would go further than any other previous work and address sustainability issues in one of the most significant sub-sectors of the mining industry for the renewable transition.

The sources of imagery for this project will be high-resolution imagery from Planet as well as medium resolution sources from Landsat and Sentinel.

In addition to the main project, you will also support other research teams with analytical problems that are amenable to machine-learning approaches, specifically those that use publicly available satellite imagery for the detection and monitoring of palm oil and soy plantations and other forest-risk commodity crops, destructive mining and utilisation of fossil fuel infrastructure.

The intern will be part of the Data Investigations Team, a group of analysts and programmers working across the whole organisation that research data-driven stories and build lightweight applications in the service of fighting the climate crisis and exposing corporate abuses. You can see a selection of the team's works [here](#).

As part of the internship, you will work with a range of different campaign and campaign teams at the organisation, specifically with those teams looking at fossil fuel and agricultural

TIN + DSG Spring 2022

commodity production and supply chains.

Expected Outcomes

Global Witness aims to change laws through exposés, targeted communications and advocacy. The ultimate aim of a successful project would be to change national laws relating to the production of a specific set of critical minerals.

If successful, this project will provide new information on a largely opaque process of production.

Other outputs will include articles and digital communications presenting the findings from the project and new evidence they provide concerning the production of the critical minerals in question. Significant findings will also be used to in advocacy materials — such as briefings and reports for policy makers — to push for better regulation of the mining sector in question.

The internship will be instrumental in the preparation of a Data Study Group challenge that will follow on and expand the intern's work with the organisation. The intern will have the opportunity to represent the organization during the Data Study Group.

Supervision and Mentorship

The role and the project will be supervised by the Head of the Data Investigations Team. Within the Data Investigations Team, you will work alongside a team of analysts and programmers who will provide support for data wrangling tasks as well as manual classification.

Ideal Intern

The ideal intern would be:

- an excellent data scientist that is interested in applying their skills to make the world a better place;
- highly organised and self-motivated able to coordinate and drive projects forward with limited supervision;
- a good communicator who can write up and talk about the results of their research in a way that is meaningful to the public, journalists and policy makers;
- experience building machine learning algorithms for classification of satellite imagery or other remote sensing imagery;
- take a creative approach to problem solving with an appetite for applying their skills to unusual problems.

Internship Logistics

The duration of the internship is 4 months and will be for 4 days a week (Monday to Thursday) The internship will start in November 2022.

This is a remote post, but we would expect that the intern is able to join in-person meetings in London at least once a month.

The salary is £30,000 pa pro rata.

For any queries, please contact Sam Leon, Head of Data Investigations, on sleon@globalwitness.org.

We aspire to be a diverse and inclusive place to work, where difference is valued and celebrated. We know that a diverse and inclusive workplace is an asset to any organisation and that different views and experiences improve the way we do our work.