Radiant ML Hub
A cloud based commons for geospatial training datasets

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EARTH IMAGERY FOR IMPACT

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Mission

*Empowering* organizations and individuals globally with open AI and EO data, standards and tools to address the world’s most critical international development challenges.

Vision

A strengthened global development community that benefits from high-quality and trusted AI and EO resources for positive global impact.
Motivation
Existing Workflows

1. **Training Data 1**
   - Training_1
   - Model_1
   - Prediction_1

2. **Training Data 2**
   - Training_2
   - Model_2
   - Prediction_2
Ideal Workflow

Benchmarking

Training Data

Training_1 ➔ Model_1 ➔ Prediction_1

Training_2 ➔ Model_2 ➔ Prediction_2

Training_3 ➔ Model_3 ➔ Prediction_3

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ML Commons for Earth Observation

**Hub**
- EO training datasets
- ML Models
- High impact competitions
- Image annotation + ground-referencing

**Community**
- Convenings to develop standards around ML on EO
- Interoperability of datasets
- Technical Working Groups
- White Papers

**Educations**
- EO market information
- Best practices on use of ML and EO
- Speaking engagements
- Media outreach
STAC for Training Data

Label Extension Specification (label)
How will it look like in practice?

```
In [1]: import mlhubearth as mle

In [2]: demo_bbox = [
   (37.176361083984375, -6.815989239380505),
   (37.24365234375, -6.7559877474853325)
]

In [3]: td_id = mle.datasets(keywords = "maize", bbox = demo_bbox)

   {'data provider': 'Radiant Earth Foundation',
    'docs': 'www.mlhub.earth/datasets/tanzania_crop_2017',
    'id': '87472972523egb7365288157394uyhs6352527e',
    'license': 'CC BY',
    'name': 'Tanzania Crop Type Dataset 2017',
    'version': '1.0'}

In [4]: (x_train, y_train) = td_id.load_data()

In [ ]:
```
STAC Browser for Training Data

Demo

Source: Dave Luo (Anthropocene Labs, World Bank)
Training Datasets in the Works

- Built on ESA Sentinel-2 data (10 m resolution)
- Crowdsourcing and citizen science to validate labels
- Hosted on AWS
- Available via API to public with Creative Commons license

Sponsored by:

Sample training data for crop type
Join the Community

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OurRadiantEarth
github.com/radiantearth

Funders

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