Dataset Documentation

Name:
AgriFieldNet Competition Dataset

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Version:
1.0

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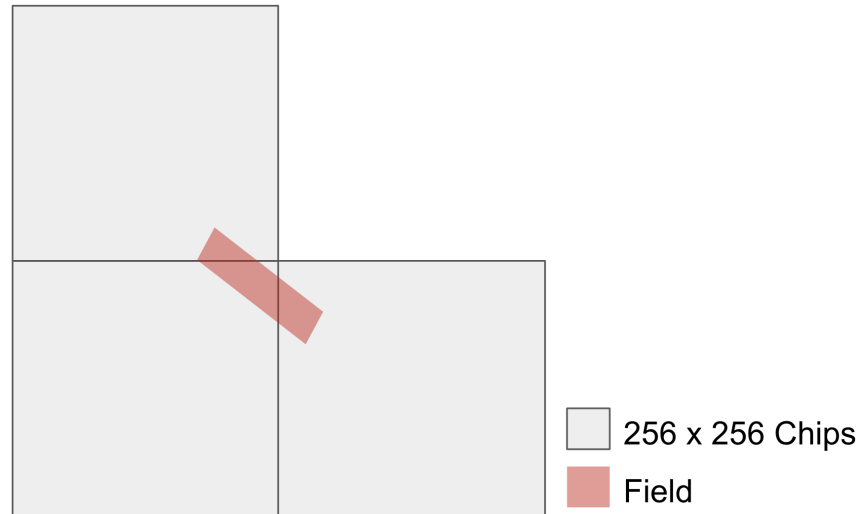
Description:
This dataset contains crop types of agricultural fields in four states of Uttar Pradesh, Rajasthan, Odisha and Bihar in northern India. There are 13 different classes in the dataset including Fallow land and 12 crop types of Wheat, Mustard, Lentil, Green pea, Sugarcane, Garlic, Maize, Gram, Coriander, Potato, Bersem, and Rice. The dataset is split to train and test collections as part of the AgriFieldNet India Competition. Ground reference data for this dataset is collected by IDinsight's Data on Demand team. Radiant Earth Foundation carried out the training dataset curation and publication. This training dataset is generated through a grant from the Enabling Crop Analytics at Scale (ECAAS) Initiative funded by The Bill & Melinda Gates Foundation and implemented by Tetra Tech.

Dataset Structure:
The dataset contains 256 x 256 pixel chips adding up to 1217 tiles. The fields are distributed across all chips, some chips may only have train or test fields and some may have both. Since the labels are derived from data collected on the ground, not all the pixels are labeled in each chip. If the field ID for a pixel is set to 0 it means that pixel is not included in either of the train or test set (and correspondingly the crop label will be 0 as well).

It's important to know that some fields fall across multiple chips (in both train and test sets), and in this case there will be pixels associated with the same field ID in more than

one chip. The following figure shows an example of a field that is spread across three chips.

Each chip has:
- Sentinel-2 imagery for 12 bands [B01, B02, B03, B04, B05, B06, B07, B08, B8A, B09, B11, B12] mapped to a common 10m spatial resolution grid.
- A raster layer indicating the crop ID for the fields.
- A raster layer indicating field IDs for the fields.

The label chips contain the mapping of pixels to crop type labels. The following pixel values correspond to the following crop types:

      1 - Wheat

      2 - Mustard

      3 - Lentil

      4 - No crop/Fallow

      5 - Green pea

      6 - Sugarcane

      8 - Garlic

      9 - Maize

      13 - Gram

      14 - Coriander

      15 - Potato

      16 - Bersem

      36 - Rice

File Format Structure

The collections you download from Radiant MLHub will be structured as following:

- **Source imagery:**

```
ref_agrifieldnet_competition_v1_source
|
|—ref_agrifieldnet_competition_v1_train_source_s2_{chip_id}
|       |—B01.tif
|       |—B02.tif
|       |—B03.tif
|       |—B04.tif
|       |—B05.tif
|       |—B06.tif
|       |—B07.tif
|       |—B08.tif
|       |—B8A.tif
|       |—B09.tif
|       |—B11.tif
|       |—B12.tif
|       |—stac.json
```

- **Train labels:**

```
ref_agrifieldnet_competition_v1_labels_train
|
|—ref_agrifieldnet_competition_v1_labels_train_{chip_id}
|       |—field_ids.tif
|       |—stac.json
|       |—raster_labels.tif
```

- **Test labels:**

```
ref_agrifieldnet_competition_v1_labels_test
|
|—ref_agrifieldnet_competition_v1_labels_test_{chip_id}
|       |—field_ids.tif
|       |—stac.json
```

Contact:

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