dymaxionlabs Documentation

Release unknown

Dymaxion Labs

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Contents

This is the Python package for accessing the Dymaxion Labs Platform.

Features

The Dymaxion Labs Platform allows you:

- Download and upload satellite and drone images.
- Train machine learning models for object detection, segmentation, change detection, and more.
- Work your data using a REST API and Python.

This is a publicly installable package. However, if you want access to our full Platform, you will need to create a Dymaxion Labs account.

CHAPTER 2

Install

Install the latest client package via pip:

```
pip install dymaxionlabs
```

Authentication

Sing up at https://app.dymaxionlabs.com/signup if you don't have a user yet, otherwise log in.

When entering the first time, you will be asked to create a new Project. After nameing your project you will enter the main dashboard. Take note of your Project Id.

Now enter the API Key section, create a new API key and copy the generated key.

You need to set both keys as environment variables, like this:

```
export DYM_API_KEY=...
export DYM_PROJECT_ID=...
```

You can also do this from Python:

```python
import os

os.environ["DYM_API_KEY"] = "insert-api-key"
os.environ["DYM_PROJECT_ID"] = "insert-project-id"
```

From now on, you have full access to the Dymaxion Labs API from Python.

CHAPTER 4

Examples

To use your models for predicting, you have to know their UUID.

You can obtain this by visiting the models page: https://app.dymaxionlabs.com/home/models. Click on the Edit button of your model, then on Show UUID menu option. Copy this and pass it as parameter to the `Estimator` constructor.

You can predict objects in local images. For example, if you have `img.jpg`:

```python
import time
from dymaxionlabs.models import Estimator

model = Estimator('b4676699-27c8-4193-a24c-cffaf88cce92')

job = model.predict_files(local_files=['./img.jpg'])

# Wait for results
while not job.status():
    print("Waiting for results...")
    time.sleep(60)

# Download results to ./results directory (will be created if not exists)
job.download_results("./results")
```

or use previously uploaded files (*remote*)

```python
import time
from dymaxionlabs.models import Estimator, Project

project = Project()
files = project.files()
first_file = files[0]

model = Estimator('b4676699-27c8-4193-a24c-cffaf88cce92')

job = model.predict_files(remote_files=[first_file.name])
```

```python
# Wait for results
while not job.status():
    print("Waiting for seconds results...")
    time.sleep(60)

# Download results to ./results directory (will be created if not exists)
job.download_results("./results")
```

CHAPTER 5

Contents

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Version 2.0, January 2004

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5.3 Changelog

5.3.1 Version 0.1

- Upload and download files
- Predict using a trained estimator

5.4 dymaxionlabs

5.4.1 dymaxionlabs package

Submodules

dymaxionlabs.files module

class dymaxionlabs.files.**File**(*project*, *name*, *metadata*)
    Bases: object

    download()
        Download file and save it to +output_dir+

        If the directory does not exist it will be created.

            Parameters output_dir – path to store file

dymaxionlabs.files.**download**(*filename*, *output_dir='.'*)
    Download a file named +filename+ to +output_dir+

    If the output directory does not exist it will be created.

        Parameters

            - **filename** – image name

            - **output_dir** – local destination to store the image

dymaxionlabs.files.**upload**(*filename*)
    Upload a file named +filename+

        Parameters -- path to local file(*filename*)–

> **Returns** Returns the detail of the object that was created in DymaxionLabs's server
>
> **Raises** `FileExistsError` – The filename argument does not correspond to an existing file

dymaxionlabs.models module

class `dymaxionlabs.models.`**`Estimator`**(*uuid*)

> Bases: `object`
>
> Class that represents an Estimator in DymaxionLabs API
>
> **classmethod all**()
>
> > Obtain all UUIDs of estimators from your project
> >
> > > **Returns** Returns an array of UUIDs
>
> **predict_files**(*remote_files=[]*, *local_files=[]*)
>
> > Predict files
> >
> > This function will start a prediction job over the specified files. You can predict over already upload images by providing a list of +remote_files+, or over images in your disk by providing a list of +local_files+. Local files will be uploaded before prediction.
> >
> > > **Parameters**
> > >
> > > - **remote_files** – array of string with the names of already uploaded files
> > > - **local_files** – array of string with the names of local files
> > >
> > > **Returns** Returns a dict with info about the new PredictionJob

class `dymaxionlabs.models.`**`PredictionJob`**(*id*, *estimator*, *finished*, *image_files*, *result_files*)

> Bases: `object`
>
> Class that represents a PredictionJob in DymaxionLabs API
>
> A PredictionJob is a background job that performs the prediction using a previously trained Estimator and your uploaded images.
>
> **download_results**(*output_dir='.'*)
>
> > Download results from a finished PredictionJob
> >
> > > **Parameters** **output_dir** – path for storing results
>
> **status**()
>
> > Get status of a PredictionJob
> >
> > > **Returns** Returns a boolean whether the job finished or not

class `dymaxionlabs.models.`**`Project`**

> Bases: `object`
>
> **files**()
>
> > Obtain all info about the uploaded files from your project
> >
> > > **Returns** Returns a array of File objects

dymaxionlabs.utils module

`dymaxionlabs.utils.`**`get_api_key`**()

> Get current API Key from environment

dymaxionlabs.utils.**get_api_url**()
>   Get current API URL from environment

dymaxionlabs.utils.**get_project_id**()
>   Get current Project uuid from environment

Module contents

Package to integrate the DymaxionLabs's funcionality:

- Upload images

- Predict imagenes based in object detection models

- Download results

CHAPTER 6

Indices and tables

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- modindex
- search

Python Module Index

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