ADAMS

Advanced **D**ata mining **A**nd **M**achine learning **S**ystem

Module: happy-adams



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Chapter 1

Introduction

The *happy-adams* module provides actors for dealing with hyperspectral images. It builds on functionality found in the following libraries:

- GDAL[4]
- SPy (Spectral Python)[5]

In order to avoid any version conflict between libraries, these operators use Docker[3] images behind the scenes to execute the commands within that context.

Chapter 2

Flow

The following standalones are available:

- *GDALConfiguration* – specifies the Docker image to use for executing GDAL commands
- *SPyConfiguration* – specifies the Docker image to use for executing Spectral Python commands

The following transformers are available:

- *GDAL* – executes the selected GDAL command with the specified parameters applied to the incoming data (i.e., file(s)).

2.1 GDAL

The following GDAL commands are supported:

- *Info* – outputs information about a raster dataset (`gdalinfo`).
- *Translate* – translates a dataset from format into another (*gdal_translate*).

2.2 SPy

The following Spy commands are supported:

- *EnviInfo* – outputs information about an ENVI file (*spy-envi_info*).
- *EnviToRGB* – turns an ENVI file into an RGB one (*spy-envi_to_rgb*).

Chapter 3

Docker images

Below are pointers to the source code for the Docker images used by this module:

- *GDAL* – `https://github.com/wairas/happy-gdal-docker`
- *Spectral Python* – `https://github.com/wairas/happy-spy-docker`
- *spy-utilities* – `https://github.com/wairas/happy-spy-utilities-docker`

Bibliography

[1] *ADAMS* – Advanced Data mining and Machine learning System
`https://adams.cms.waikato.ac.nz/`

[2] *ADAMS Snapshots* – daily builds of Happy-specific ADAMS
`https://adams.cms.waikato.ac.nz/snapshots/happy/`

[3] *Docker* – a set of platform as a service (PaaS) products that use OS-level virtualization to deliver software in packages called containers
`https://www.docker.com/`

[4] *GDAL* – GDAL is a translator library for raster and vector geospatial data formats.
`https://gdal.org/`

[5] *SPy (Spectral Python)* – a pure Python module for processing hyperspectral image data.
`http://www.spectralpython.net/`