
Sid Documentation

Release 0.2.4

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Author: [Yoav Ram](#) **Source code:** [GitHub](#)

Sid is an open-source Python package for image processing of plant seed images, specifically *Lamium amplexicaule*.

CHAPTER 1

Requirements

- Python 2.7
- PIL/Pillow
- numpy
- scipy.ndimage
- scikit-image
- matplotlib
- watchdog
- click
- pywin32 (on Windows)

For testing and documentation:

- nose
- coverage
- sphinx

CHAPTER 2

Install

1. Install the [Anaconda Python 2.7](#) distribution.
2. Update all Python packages using **conda**:

```
>>> conda update --all --yes
```

3. Install Sid using **pip**:

```
>>> pip install Sid
```

4. Check that Sid was installed properly by running the **take_cover** script:

```
>>> take_cover --version
Sid, version x.x.x
```

where `x.x.x` will be replaced by the current version (0.2.4).

Tip: When installing on **Windows**, if you get an error trying to install *pywin32* or *pypiwin32*, try to run:

```
>>> conda install pywin32 --yes
```

2.1 Upgrade

To upgrade to the newest version of Sid (0.2.4):

```
>>> conda update --all --yes
>>> pip install --upgrade Sid
>>> take_cover --version
Sid, version x.x.x
```


CHAPTER 3

Usage

Use by running:

```
>>> take_cover
```

The script will first ask for a folder name - this will be the working directory from which the script will read `.jpg` files and to which it will write `.png` and `.csv` files.

The script will then ask if the folder should be processed Continuously or once.

For more options, see the help message:

```
>>> take_cover --help
```

3.1 Continuous processing

In this case the script will wait for new `.jpg` files in the folder. When a new `.jpg` file is created, the script will process it, creating `.png` files with the color spaces and the segmentation checkpoints, open the segmentation image, and will print the final stats to the screen.

3.2 Single processing

In this case the script will go over all `.jpg` files in the folder and process them. It will produce `.png` files with the color spaces and the segmentation checkpoints and two `.csv` files: one with the final stats for each `.jpg` file and one with the histograms that were used to find the features on the seed (background, eliosom, cover).

3.3 Configuration file

`take_cover.json` is the configuration file which includes values of different parameters of the algorithm, including segmentation thresholds.

CHAPTER 4

Support

Don't hesitate to contact [Yoav Ram](#) with questions and comments.

Bugs and feature requests can be opened on [GitHub Issues](#)

CHAPTER 5

Developers

Developers should clone the repository from GitHub and install it in *editable* mode:

```
>>> git clone https://github.com/yoavram/Sid.git
>>> cd Sid
>>> pip install -e .
```

- Source code is hosted by [GitHub](#)
- Testing is done with `nosetests Sid/tests`
- Continuous integration and deployment is performed by [Travis-CI](#)
- Code coverage is tracked by [codecov.io](#)
- Package is hosted on [PyPi](#)
- Documentation is hosted by [Read The Docs](#)
- Documentation is built with [Sphinx](#)

CHAPTER 6

License

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