Dataset loaders Documentation

Release 1.0

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Contents

This repository contains a framework to load the most commonly used datasets for image and video semantic segmentation. The framework can perform some on-the-fly preprocessing/data augmentation, as well as run on multiple threads (if enabled) to speed up the I/O operations.

See also:

NEWS! You might be interested in checking out Main loop TF, a python main loop that integrates the Dataset loaders with Tensorflow!

CHAPTER 1

Attribution

Warning: If you use this code, please cite:

> Francesco Visin, Adriana Romero, (2016). *Dataset loaders: a python library to load and preprocess datasets* [BibTex]

CHAPTER 2

Quick start

1. Clone the repository with *–recursive* in some path, e.g. to your *$HOME*:

```
git clone --recursive https://github.com/fvisin/dataset_loaders.git "$HOME/
↪dataset_loaders"
```

2. Install the package:

```
pip install [--user] -e <dataset_loaders path> -r requirements.txt
```

3. The framework assumes that the datasets are stored in some *shared paths*, accessible by everyone, and should be copied locally on the machines that run the experiments. The framework automatically takes care for you to copy the datasets from the shared paths to a *local path*.

   Create a configuration file in `[..]/dataset_loaders/dataset_loaders/config.ini` to specify these paths (see the config.ini example in the same directory for guidance).

   Note: if you want to disable the copy mechanism, just specify the same path for the local and the shared path:

```
[general]
datasets_local_path = /a/local/path
[camvid]
shared_path = /a/local/path/camvid
[cityscapes]
shared_path = /a/local/path/cityscapes/

(etc...)
```

4. To use the MS COCO dataset, you also need to do the following:

```
cd dataset_loaders/images/coco/PythonAPI
make all
```

4. You will need to install SimpleITK and openCV if you intend to use the *warp_spline* or the *optical flow* data augmentations respectively.

CHAPTER 3

Disclaimer

The code is provided as is, please expect minimal-to-none support on it.

This framework is provided for research purposes only. Although we tried our best to test it, the code might be bugged or unstable. Use it at your own risk!

The framework currently supports image or video based datasets. It could be easily extended to support other kinds of data (e.g., text corpora), but there is no plan on our side to work on that at the moment. * Feel free to contribute to the code with a PR if you find bugs, want to improve the existing code or add support for other datasets.

CHAPTER 4

Index

- genindex - Alphabetical index of content
- modindex - List of modules

CHAPTER 5

API

Parallel loader

These functions are implemented in the `parallel_loader` module, which defines the functions and attributes common to all datasets.

Image datasets

Camvid

Cifar10

Cityscapes

Isbi em stacks

Kitti

MS coco

Pascal VOC

Polyps912

Scene parsing MIT

Video Datasets

Change detection

Davis

Gatech

Utilities

Parallel loader utilities

Data augmentation utilities