pyreaper Documentation

Release 0.0.7

Ryuichi YAMAMOTO

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Contents

A python wrapper for REAPER (Robust Epoch And Pitch EstimatoR).

https://github.com/r9y9/pyreaper

CHAPTER 1

Installation guide

The latest release is availabe on pypi. You can install it by:

```
pip install pyreaper
```

Note that you have to install `numpy` to build C-extensions.

If yout want the latest development version, assuming you have `cython` installed, run:

```
pip install git+https://github.com/r9y9/pyreaper
```

or:

```
git clone https://github.com/r9y9/pyreaper
cd pyreaper
git submodule update --init --recursive
python setup.py develop # or install
```

This should resolve the package dependencies and install `pyreaper` property.

CHAPTER 2

API

pyreaper.reaper(x, fs[, minf0, maxf0, ...])	REAPER (Robust Epoch And Pitch EstimatoR)

2.1 pyreaper.reaper

pyreaper.**reaper**(*x*, *fs*, *minf0=40.0*, *maxf0=500.0*, *do_high_pass=True*, *do_hilbert_transform=False*, *inter_pulse=0.01*, *frame_period=0.005*, *unvoiced_cost=0.9*)

REAPER (Robust Epoch And Pitch EstimatoR)

Perform REAPER analysis given an audio signal

Parameters

x [np.ndarray, dtype=np.int16] Input audio signal

fs [int] Sampling frequency

minf0 [float] Min f0. Default is 40.0.

maxf0 [float] Max f0. Default is 500.0.

do_high_pass [Bool] Enable Rumble-removel highpass filter. Default is True.

do_hilbert_transform [Bool] Enable Hilbert transform that may reduce phase distortion. Default is False.

inter_pulse [float] Regular inter-mark interval to use in UV pitchmark regions. Default is 0.01 (sec)

frame_period [float] Frame period. Default is 0.005 (sec).

unvoiced_cost [float] Set the cost for unvoiced segments. Default is 0.9, the higher the value the more f0 estimates in noise.

Returns

pm_times [np.ndarray, dtype=np.float32] Pitch mark time series in seconds

pm [np.ndarray, dtype=np.int32] Pitch mark. Value 1 and 0 means voiced frame and unvoiced frame, respectively.

f0_times [np.ndarray, dtype=np.float32] F0 time series in seconds

f0 [np.ndarray, dtype=np.float32] F0 contour

corr [np.ndarray, dtype=np.float32] Correlations

Raises

RuntimeError

- if EpochTracker Init failed
- if EpochTracker ComputeFeatures failed
- if EpochTracker TrackEpochs failed
- if EpochTracker ResampleAndReturnResults failed

Examples

```
>>> from scipy.io import wavfile
>>> import pysptk
>>> import pyreaper
>>> fs, x = wavfile.read(pysptk.util.example_audio_file())
>>> pm_times, pm, f0_times, f0, corr = pyreaper.reaper(x, fs)
```

CHAPTER 3

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