pyrubberband Documentation

Release 0.3.0

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Jun 11, 2018

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A python wrapper for rubberband.

For now, this just provides lightweight wrappers for pitch-shifting and time-stretching.

All processing is done via the command-line through files on disk. In the future, this could be improved by directly wrapping the C library instead.

CHAPTER 1

Example usage

```
>>> import soundfile as sf
>>> import pyrubberband as pyrb
>>> y, sr = sf.read("myfile.wav")
>>> # Play back at double speed
>>> y_stretch = pyrb.time_stretch(y, sr, 2.0)
>>> # Play back two semi-tones higher
>>> y_shift = pyrb.pitch_shift(y, sr, 2)
```

CHAPTER 2

API Reference

2.1 Functions

Command-line wrapper for rubberband

pitch_shift(y, sr, n_steps[, rbargs])	Apply a pitch shift to an audio time series.
time_stretch(y, sr, rate[, rbargs])	Apply a time stretch of *rate* to an audio time series.
timemap_stretch(y, sr, time_map[, rbargs])	Apply a timemap stretch to an audio time series.

2.1.1 pyrubberband.pyrb.pitch_shift

pyrubberband.pyrb.**pitch_shift**(*y*, *sr*, *n_steps*, *rbargs=None*)

Apply a pitch shift to an audio time series.

Parameters

y [np.ndarray [shape=(n,) or (n, c)]] Audio time series, either single or multichannel

sr [int > 0] Sampling rate of *y*

n_steps [float] Shift by *n_steps* semitones.

rbargs Additional keyword parameters for rubberband

See *rubberband -h* for details.

Returns

y_shift [np.ndarray] Pitch-shifted audio

2.1.2 pyrubberband.pyrb.time_stretch

pyrubberband.pyrb.**time_stretch**(*y*, *sr*, *rate*, *rbargs=None*)

Apply a time stretch of *rate* to an audio time series.

This uses the *tempo* form for rubberband, so the higher the rate, the faster the playback.

Parameters

y [np.ndarray [shape=(n,) or (n, c)]] Audio time series, either single or multichannel

sr [int > 0] Sampling rate of *y*

rate [float > 0] Desired playback rate.

rbargs Additional keyword parameters for rubberband

See *rubberband -h* for details.

Returns

y_stretch [np.ndarray] Time-stretched audio

Raises

ValueError if *rate <= 0*

2.1.3 pyrubberband.pyrb.timemap_stretch

pyrubberband.pyrb.**timemap_stretch**(*y*, *sr*, *time_map*, *rbargs=None*)

Apply a timemap stretch to an audio time series.

A timemap stretch allows non-linear time-stretching by mapping source to target sample frame numbers for fixed time points within the audio data.

This uses the *time* and *timemap* form for rubberband.

Parameters

y [np.ndarray [shape=(n,) or (n, c)]] Audio time series, either single or multichannel

sr [int > 0] Sampling rate of *y*

time_map [list] Each element is a tuple *t* of length 2 which corresponds to the source sample position and target sample position.

If *t[1] < t[0]* the track will be sped up in this area.

time_map[-1] must correspond to the lengths of the source audio and target audio.

rbargs Additional keyword parameters for rubberband

See *rubberband -h* for details.

Returns

y_stretch [np.ndarray] Time-stretched audio

Raises

ValueError if *time_map* is not monotonic if *time_map* is not non-negative if *time_map[-1][0]* is not the input audio length

CHAPTER 3

Contribute

- Issue Tracker
- Source Code

CHAPTER 4

Changelog

4.1 Changes

4.1.1 v0.3.0

- Added *timemap_stretch* for variable-rate warping. (PR #15) *Marc Sarfati*

4.1.2 v0.2.2

- Suppress console logging from *rubberband*

4.1.3 v0.2.1

- Improved error handling when *rubberband* fails to execute.

4.1.4 v0.2.0

- Removed dependency on librosa in favor of pysoundfile (PR #4).
- Stereo/mono interface now matches pysoundfile instead of librosa: t he first axis now corresponds to time rather than channel number.

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