

IDMT-SMT-BASS-SINGLE-TRACKS

Version 1.0, 2013

An audio database for bass transcription and signal processing.



Contact

For any questions, please contact datasets@idmt.fraunhofer.de

Database Description

The IDMT-SMT-BASS-SINGLE-TRACK dataset comprises of 17 bass lines from different music styles. It is intended as a public evaluation dataset for

- Retrieval of repetitive bass patterns
 - For each bass line, the pattern length (in seconds) and the begin of the first pattern appearance (in seconds) is annotated
 - The patterns are in general no exact repetitions but instead contain occasional pitch and rhythm variations
- Bass transcription
 - Each note is annotated with the score-related parameters
 - onset
 - offset
 - pitch
- Spatial transcription / estimation of the fretboard position
 - Each note is annotated with the instrument-related parameters
 - string number
 - fret number
- Estimation of bass guitar plucking styles
 - Each note is played and annotated with one of the 5 plucking style classes
 - Finger-style (FS) - alternate plucking of the string using the index and middle finger
 - Picked (PK) - plucking of the string using a plastic pick
 - Muted (MU) - plucking of the string using the thumb and index finger while simultaneously damping the string vibration using the palm of the hand
 - Slap-Pluck (SP) - picking of a string using either the index or the middle finger (causing a collision between the string and the upper frets)
 - Slap-Thumb (ST)- striking of the string using the thumb (causing a collision between the string and the upper frets)
- Estimation of bass guitar expression styles (6 classes)
 - Each note is played and annotated with one of the 6 expression style classes
 - Normal (NO) - no expression, just "regular" bass note playing
 - Harmonics (HA) - flageolet tones
 - Dead-note (DN) - damped, percussive note

- Bending (BE) - singular bending of the string during vibration
- Vibrato (VI) - periodic bending and releasing the string during vibration
- Slide (SL) - slide up or down after note is plucked

Content

All 17 bass lines were recorded using a Fame Baphomet 4 NTB bass guitar with 4 strings in standard tuning E, A, G, and D. The audio files are provided in the WAV format with 44.1 kHz and 16 bit. This is the same instrument and setting as it was used for the recording of the IDMT-SMT-Bass dataset

(http://www.idmt.fraunhofer.de/en/business_units/smt/bass.html) published in 2010, which contains single note bass guitar recordings with all of the above-mentioned plucking and expression styles.

In addition to the WAV recordings, the dataset comprises

- PDF files with the score / tablature of the bass lines (exported from Guitar Pro 6)
- MusicXML files (exported from Guitar Pro 6)
- Guitar Pro 6 files
- MIDI files (exported from Guitar Pro 6)

As in music practice, not all playing techniques are applied equally often, the composition of the dataset reflects this circumstance.

The dataset folder has the following subfolders:

- audio sv - This folder contains the WAV files with the original audio recordings and Sonic Visualizer files with annotation layers for the note events and the occurrences of the repeating patterns
- beats csv - This folder contains CSV files with the beat annotations in seconds and bar / beat number
- gpx - This folder contains the Guitar Pro 6 files used for the generation of the scores and tablatures
- music xml - This folder contains MusicXML files exported from the abovementioned Guitar Pro 6 files
- notes csv - This folder contains CSV files with the following note parameters
 - note onset (in seconds)
 - note offset (in seconds)
 - MIDI pitch value
 - string number (1 - E, 2 - A, 3 - D, 4 - G)
 - fret number (0 - open string, 1 - 1st fret, etc.)
 - plucking style (compare Section 1)
 - expression style (compare Section 1)
 - modulation frequency (in Hz)
 - modulation range (in cent)
- patterns csv - CSV files with start times of repeating pattern occurrences (last pattern end time is added as well!)
- score tablature pdf - PDF files with score - tablature representation of all basslines contained in the database

Authors

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References

[1] Jakob Abeßer, Patrick Kramer, Christian Dittmar, Gerald Schuller: Parametric Audio Coding of Bass Guitar Recordings using a Tuned Physical Modeling Algorithm, submitted to the 16th International Conference on Digital Audio Effects (DAFx), 2013

Licence

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