



DEPARTAMENTO DE SEÑALES, SISTEMAS Y RADIOCOMUNICACIONES



LARGE-SCALE MEDIA ANALYTICS

Master of Science in Signal Theory and Communications
TRACK: Signal Processing and Machine Learning for Big Data
Large-Scale Media Analytics

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Dataset description



Fraunhofer Institute for Digital Media
Technology IDMT



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IDMT-SMT-Chords

Reference

Nadar, Christon-Ragava; Abesser, Jakob; Grollmisch Sascha

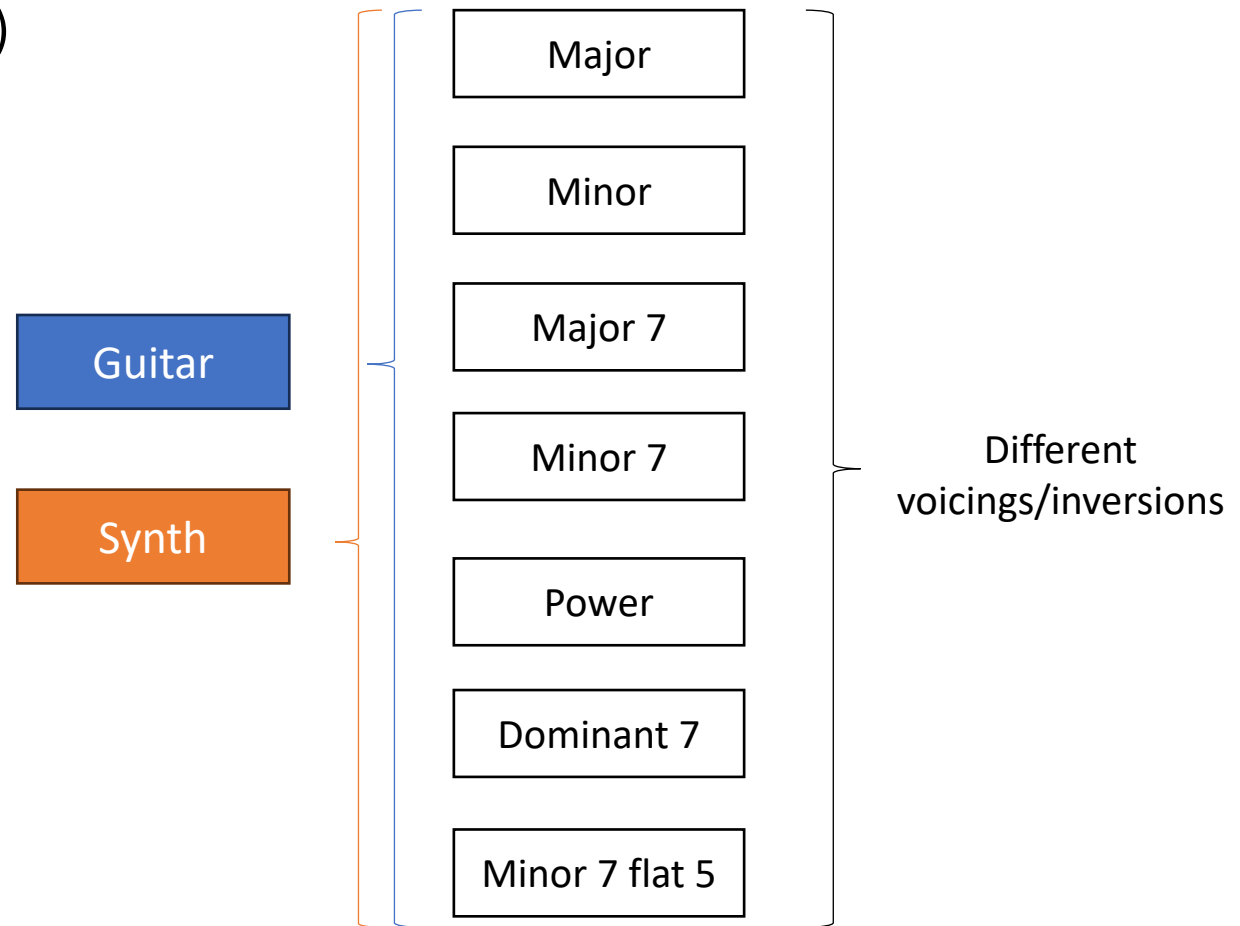
Towards CNN-based acoustic modeling of seventh chords for automatic chord recognition, Proceedings of the 16th International Conference on Sound And Music Computing (SMC), Málaga, Spain, 2019.

Contact



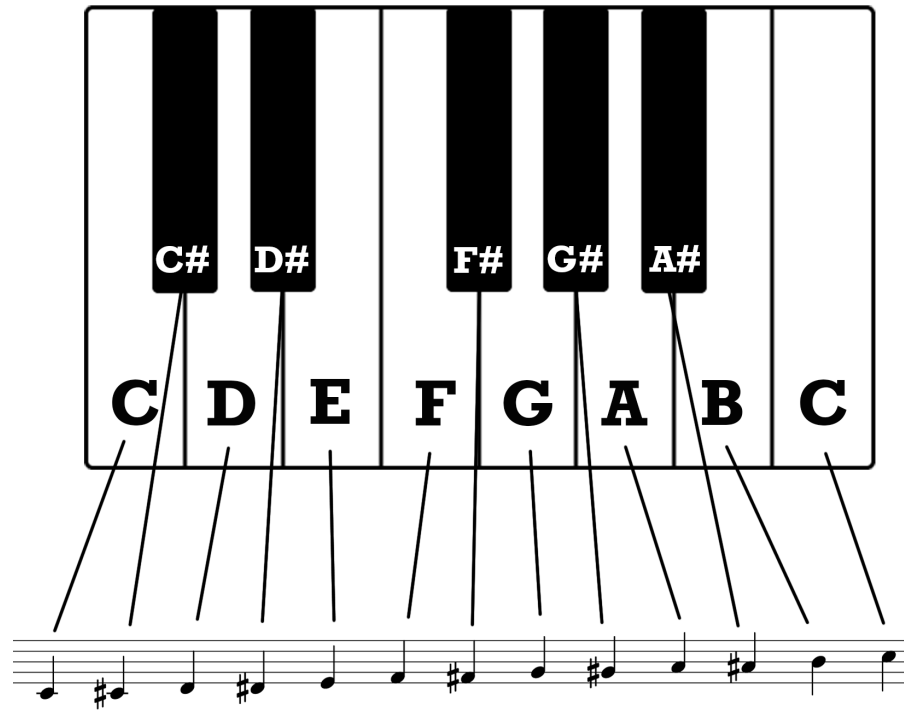
Dataset description

- IDMT-SMT-Chords (Fraunhofer IDMT)
- **Chord types**
 - **576 synth**
 - **273 guitar**
- Mono audio @ 44.1 kHz
- 120 BPM
- 2 second per chord
- 16 WAV files



Dataset description

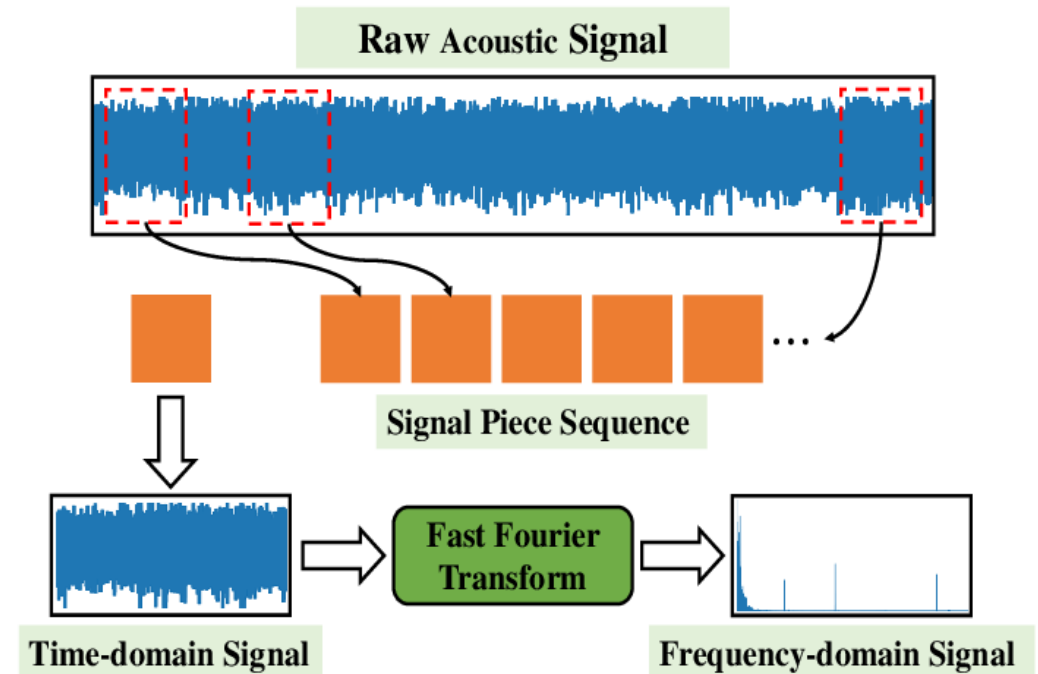
- Only **12 (semi)tones** in Western chromatic scale!



Initial dataset preprocessing

- Cropping and labeling raw audio sample data
- Non-overlapping 2 sec windows

1	0.0	2.0	E:maj
2	2.0	4.0	F:maj
3	4.0	6.0	F#:maj
4	6.0	8.0	G:maj
5	8.0	10.0	G#:maj
6	10.0	12.0	A:maj
7	12.0	14.0	A#:maj
8	14.0	16.0	B:maj
9	16.0	18.0	C:maj
10	18.0	20.0	C#:maj
11	20.0	22.0	D:maj
12	22.0	24.0	D#:maj



Dataset preprocessing

- Results:
 - WAV fragments with systematic naming: "0001.wav"
 - CSV file containing **dataframe**:
 - Filename
 - Instrument
 - Chord

```
,file_name,label,instrument,type_of_sound
0,0000.wav,C:maj,non_guitar,Jazz_Organ
1,0001.wav,C:maj/3,non_guitar,Jazz_Organ
2,0002.wav,C:maj/5,non_guitar,Jazz_Organ
3,0003.wav,C#:maj,non_guitar,Jazz_Organ
4,0004.wav,C#:maj/3,non_guitar,Jazz_Organ
5,0005.wav,C#:maj/5,non_guitar,Jazz_Organ
6,0006.wav,D:maj,non_guitar,Jazz_Organ
7,0007.wav,D:maj/3,non_guitar,Jazz_Organ
8,0008.wav,D:maj/5,non_guitar,Jazz_Organ
9,0009.wav,D#:maj,non_guitar,Jazz_Organ
10,0010.wav,D#:maj/3,non_guitar,Jazz_Organ
11,0011.wav,D#:maj/5,non_guitar,Jazz_Organ
```

Questions?