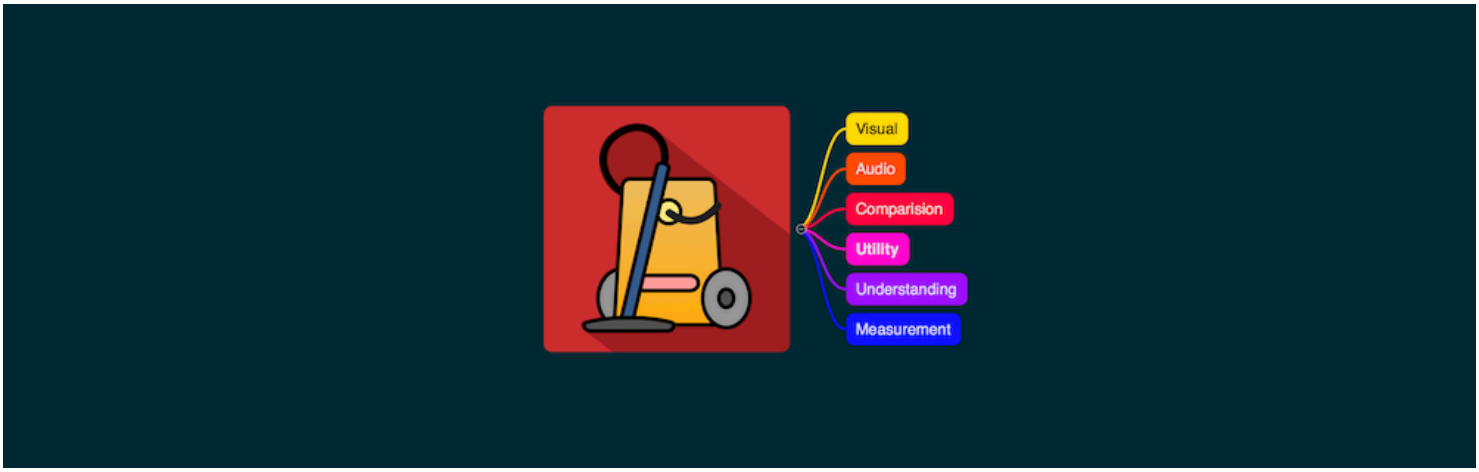
VACUUM



VISUAL AUDIO COMPARISION UTILITY [FOR] UNDERSTANDING [AND] MEASUREMENT

A testing and analysis workflow

Table of Contents

Imports

```
Librosa
IPython
Numpy
Scipy
Matplotlib
```

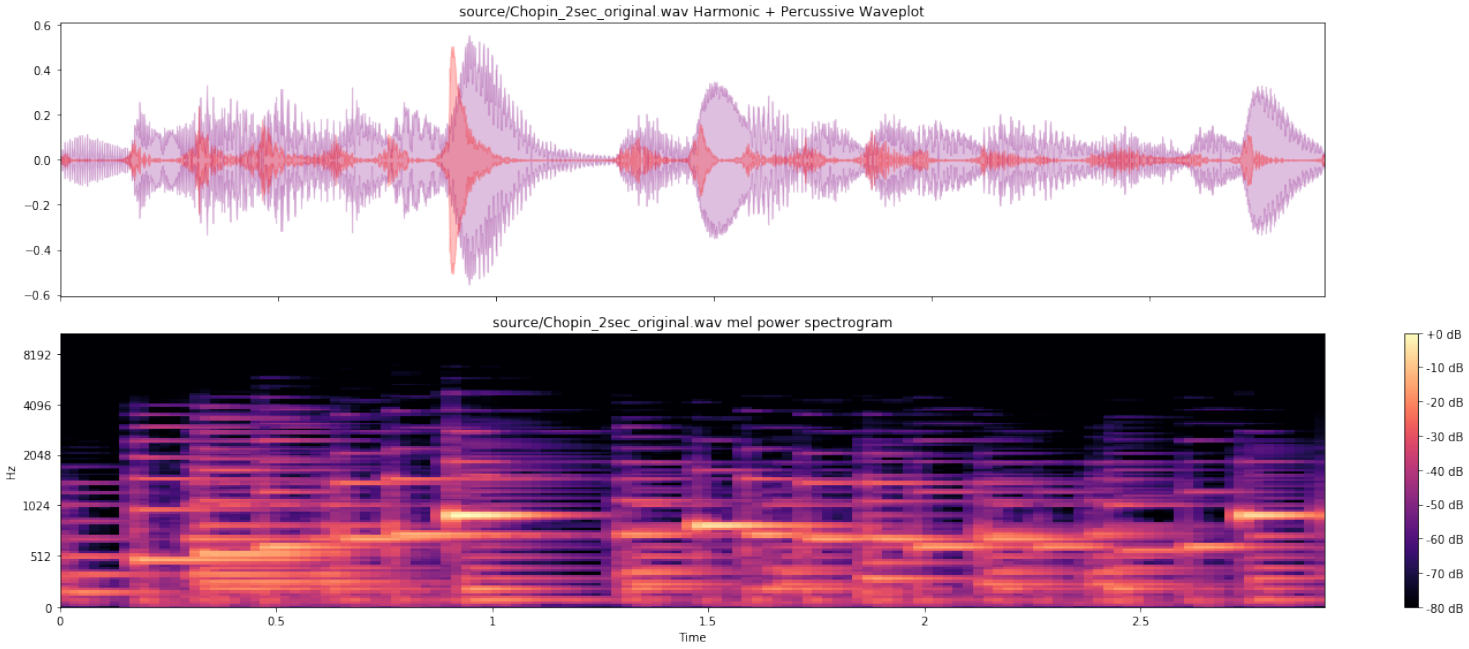
Let’s bring the files in

Source1 Track (Chopin_2sec_original.wav)

Open Source1, get some basic statistics and create a player

```
File: source/Chopin_2sec_original.wav
Duration: 2.9039 sec
Tuning estimate: 0.020000000000000018
```

Let’s take a first look at the file

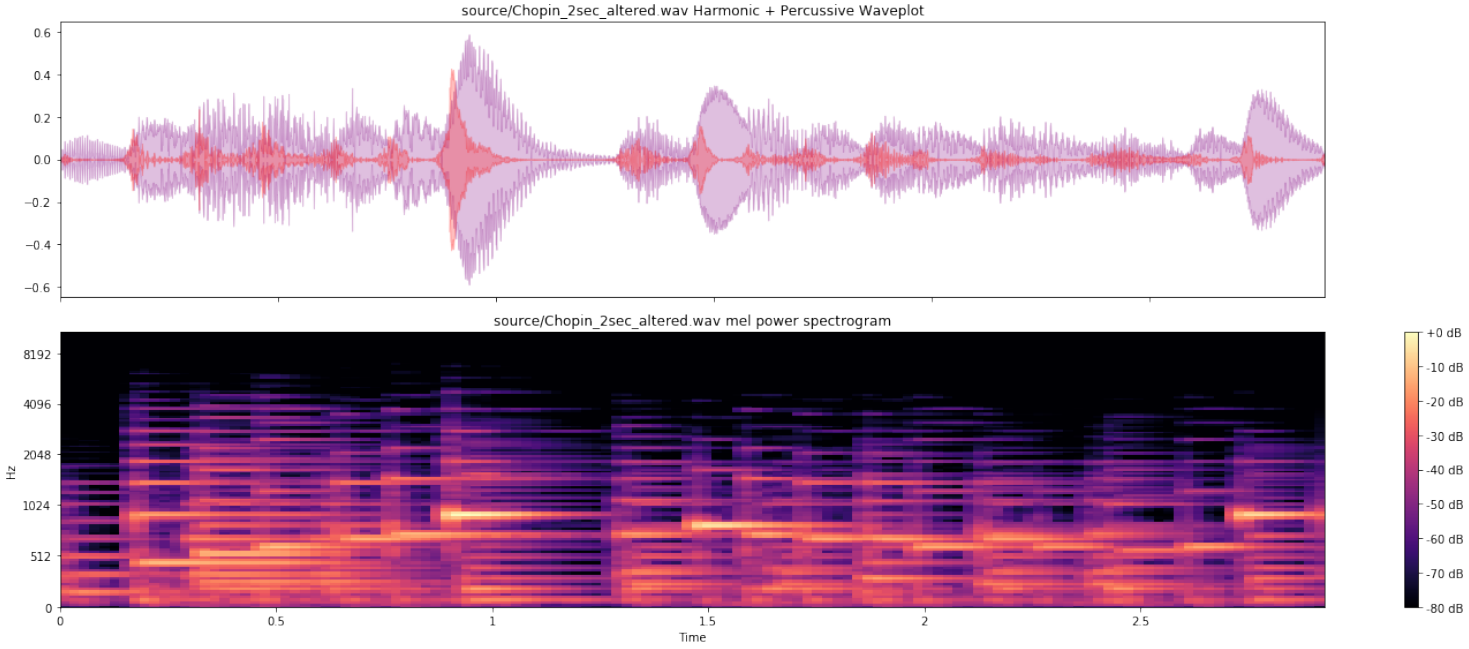


Source 2 Track (source/Chopin_2sec_altered.wav)

Open Source2, get some basic statistics and create a player

```
File: source/Chopin_2sec_altered.wav
Duration: 2.9039 sec
Tuning estimate: 0.020000000000000018
```

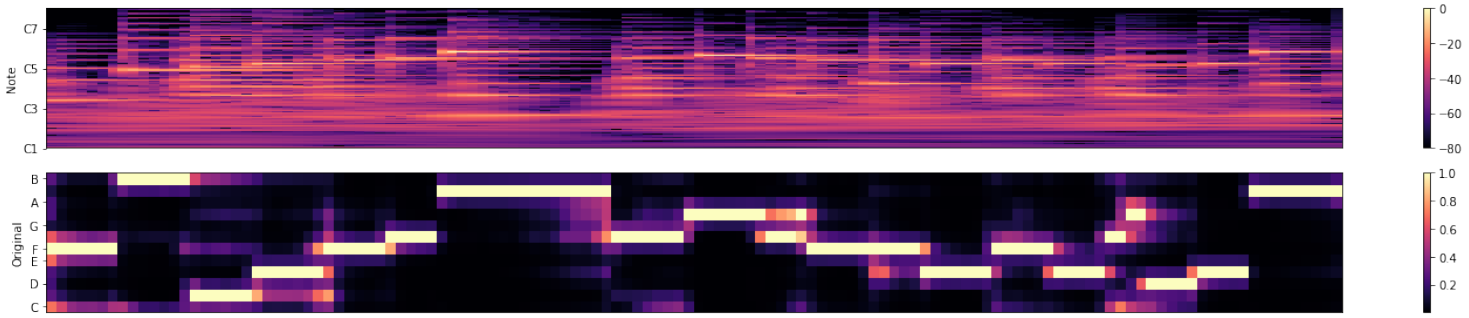
Let's take a first look at the file



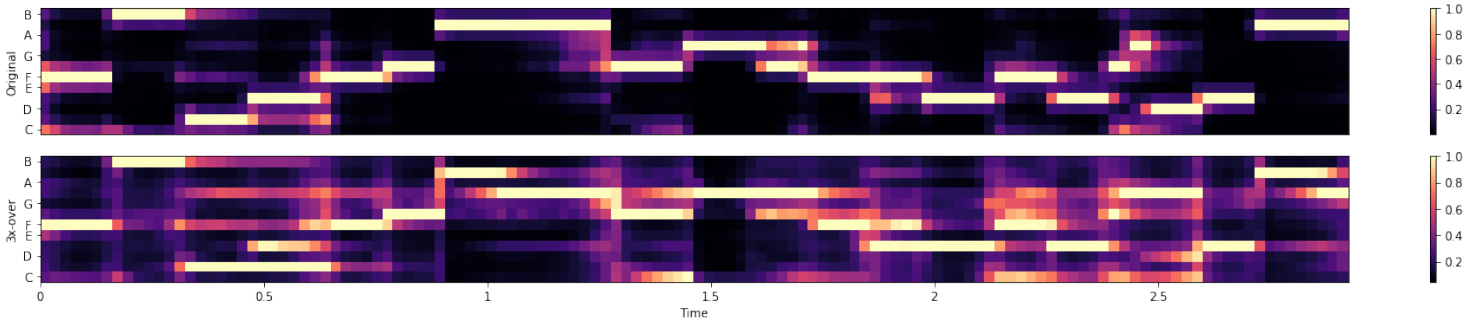
Enhanced chroma and chroma variants (source1)

Enhanced chroma and chroma variants

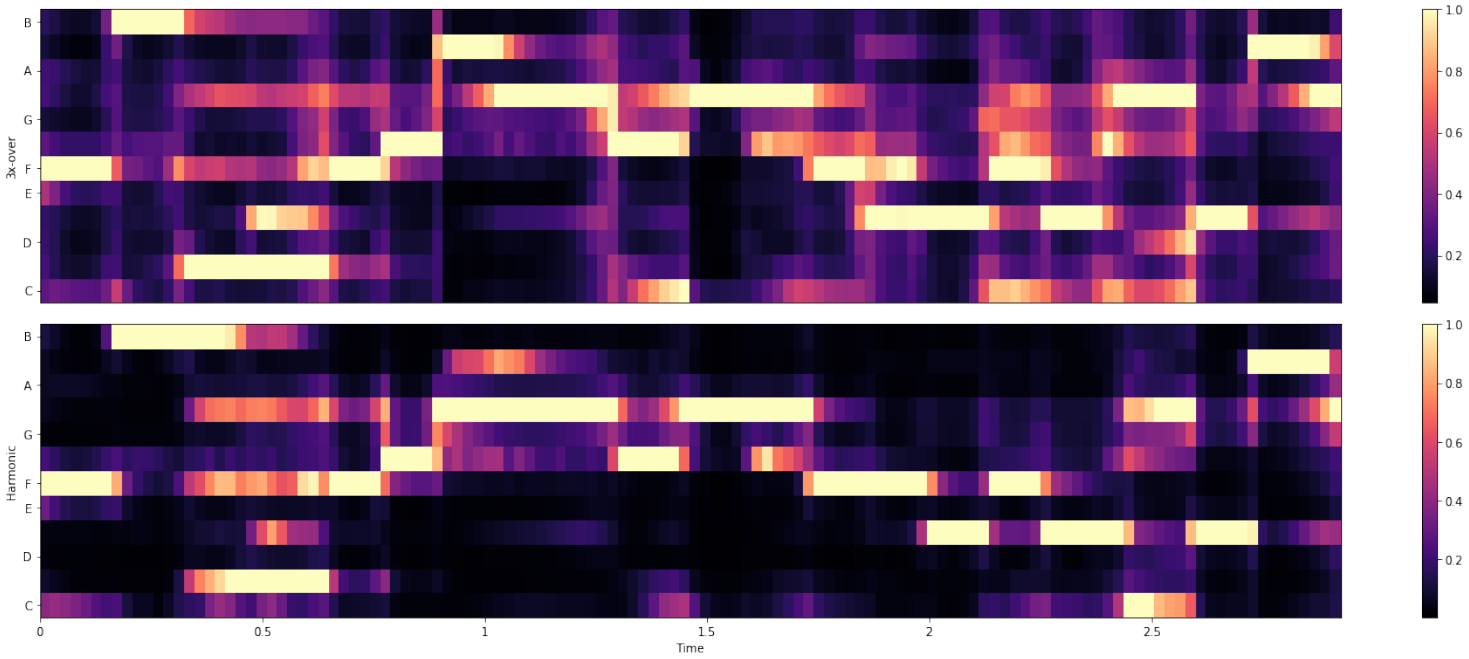
Original source1



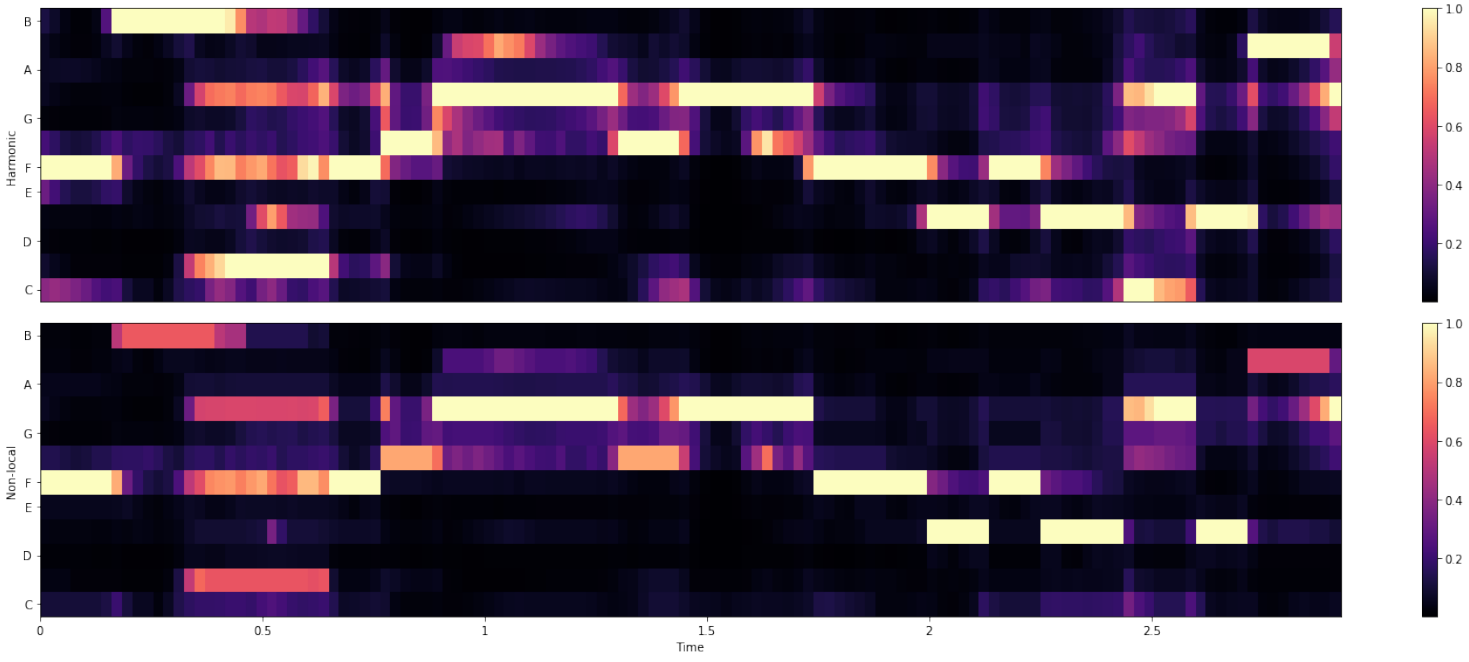
Correct Tuning Deviations



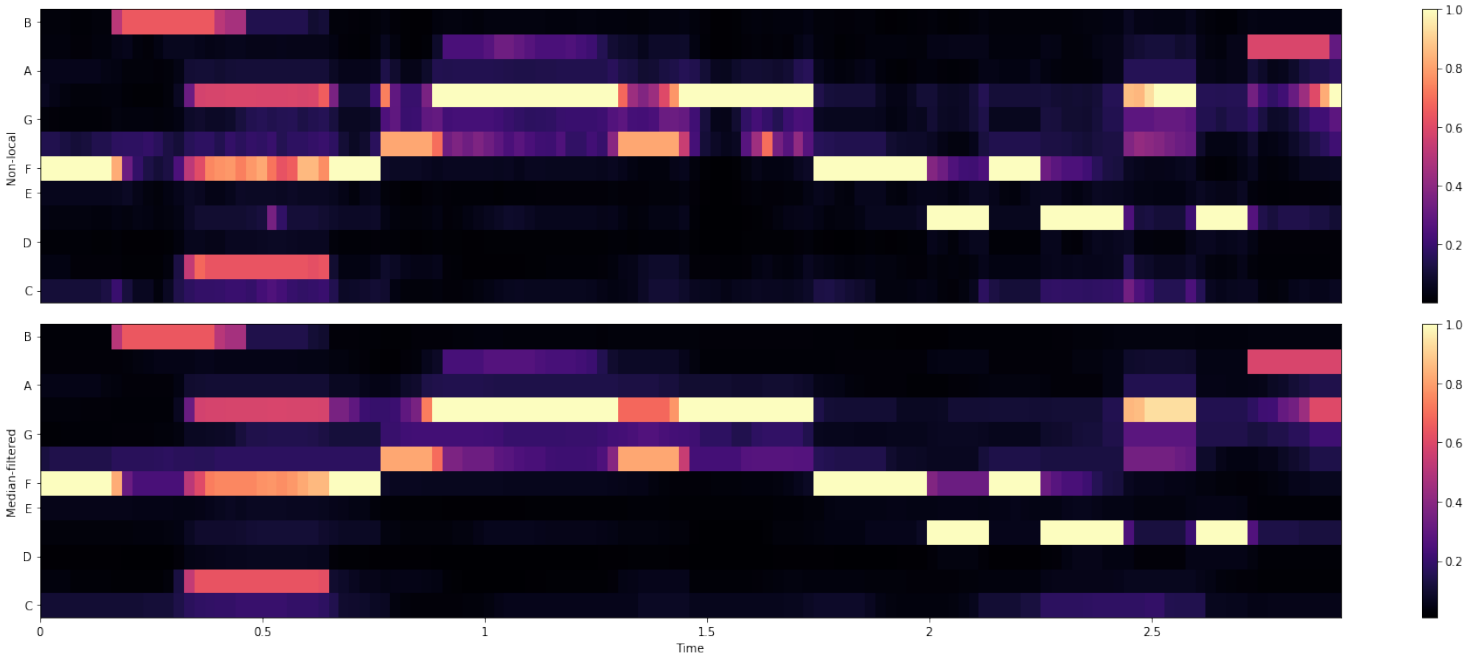
Isolate harmonic component



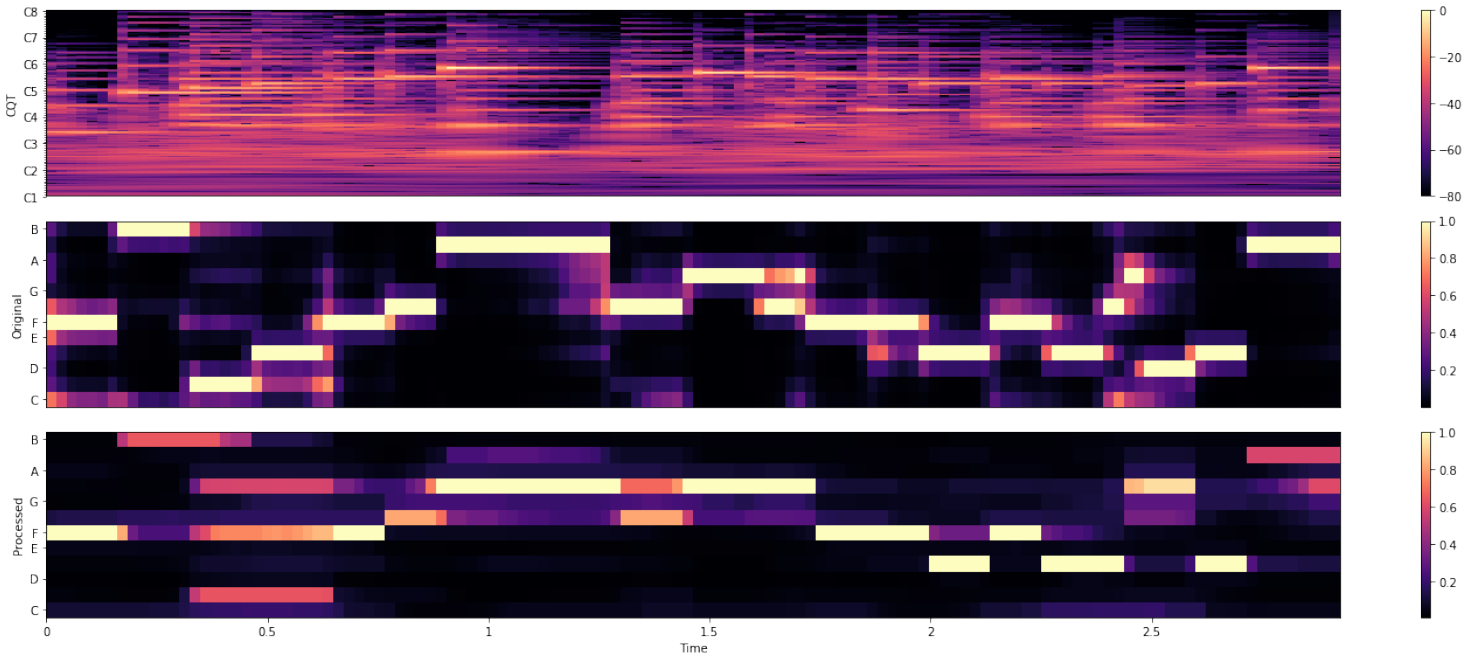
Non-local filtering



Horizontal Median Filter

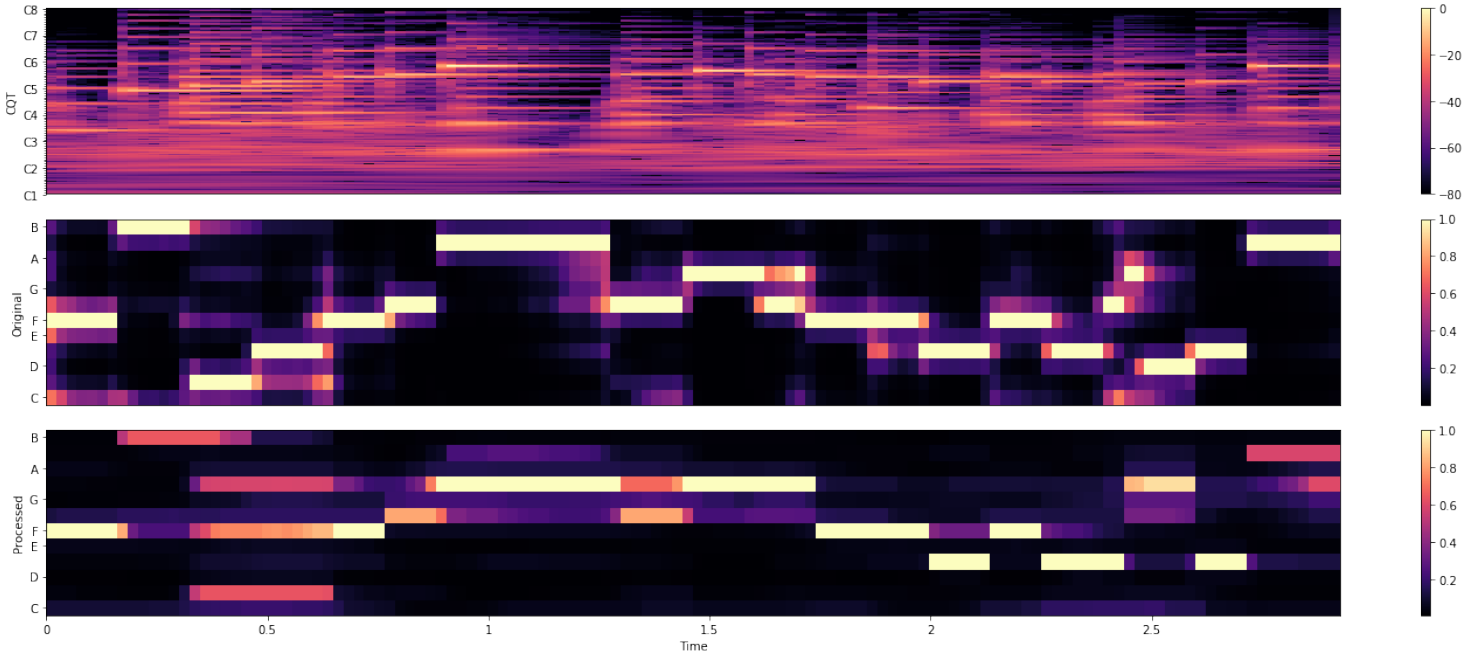


Before and After

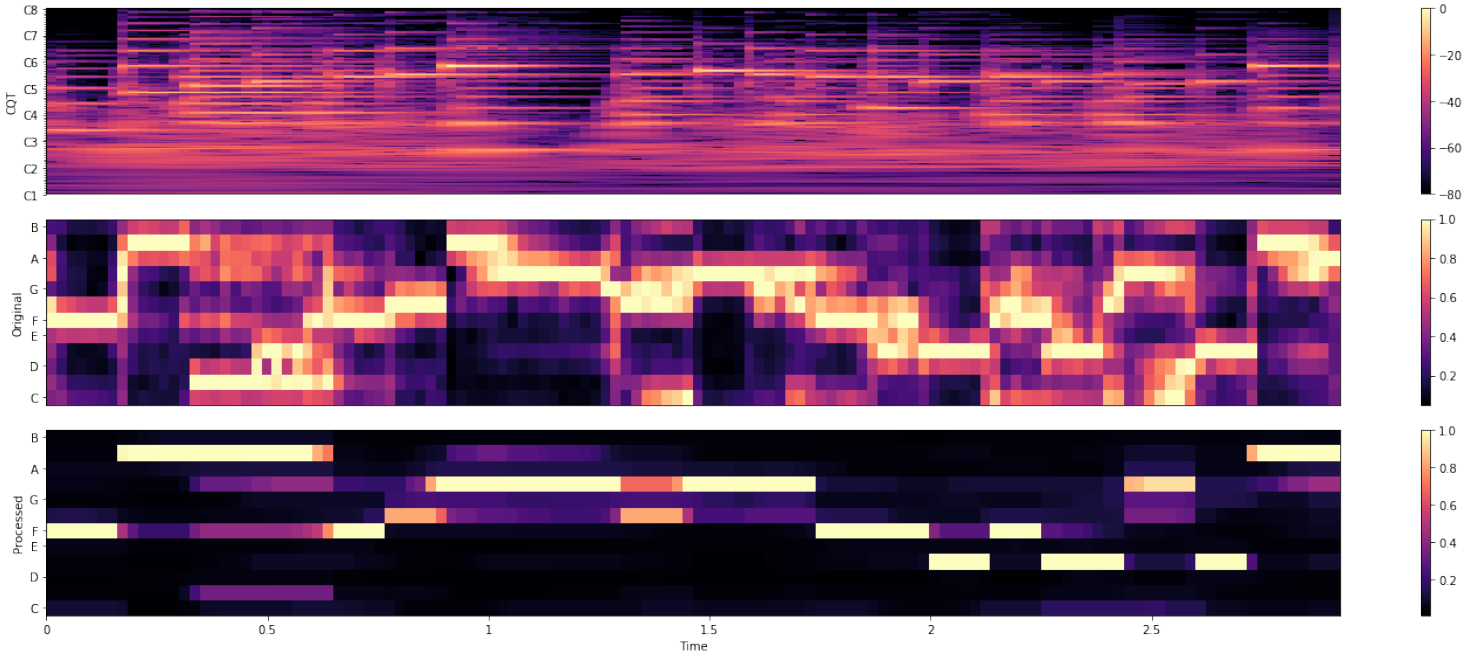


Applying chroma enchancement techniques to source files

Source1

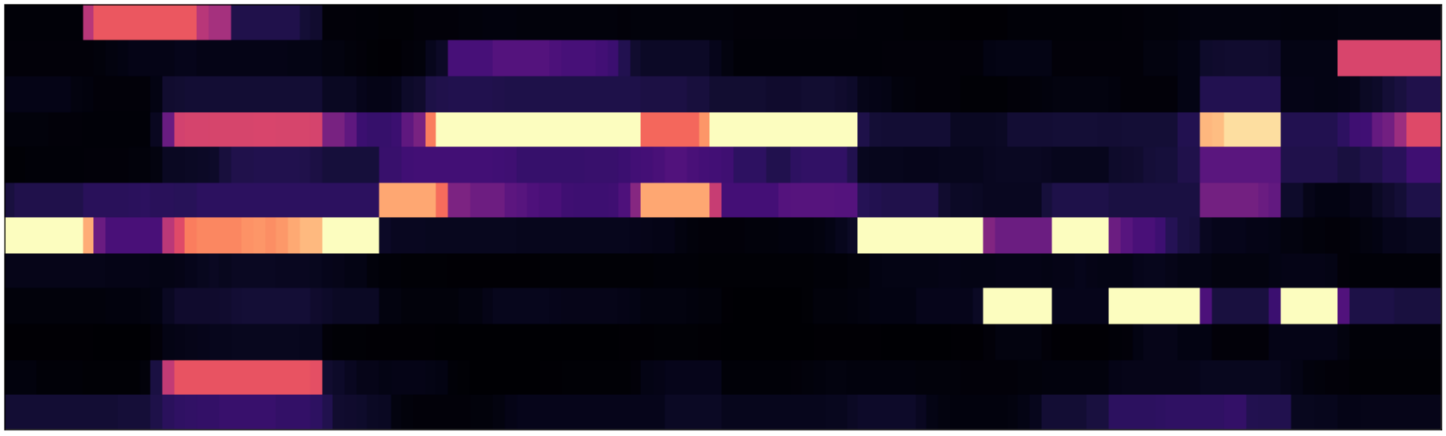


Source2

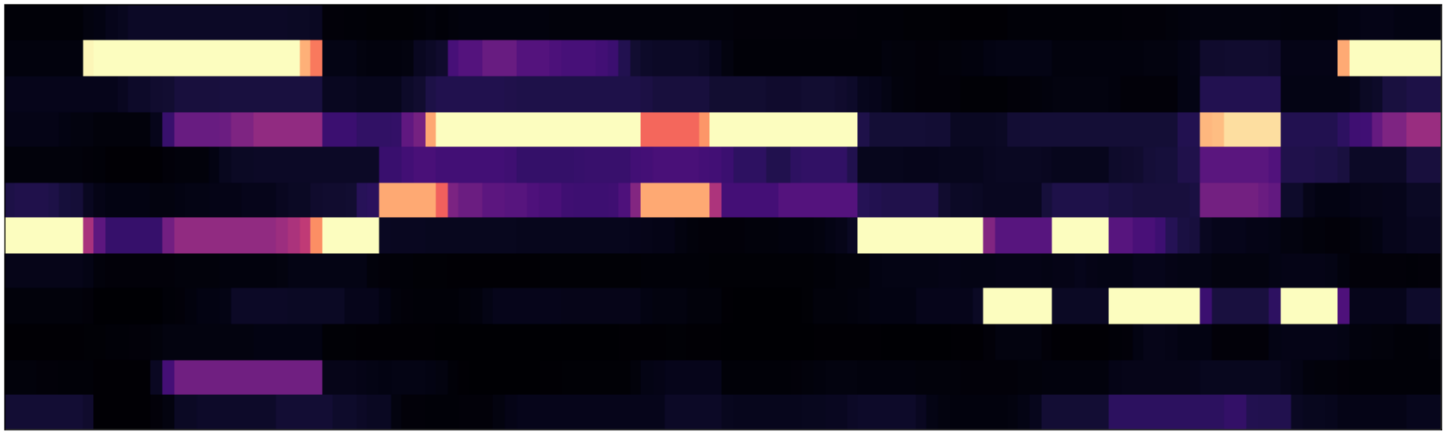


Output comparisions for testing

Source1



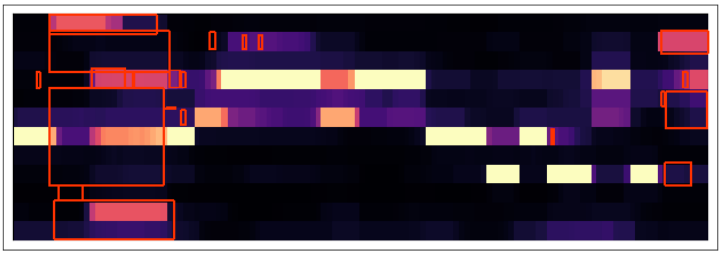
Source2



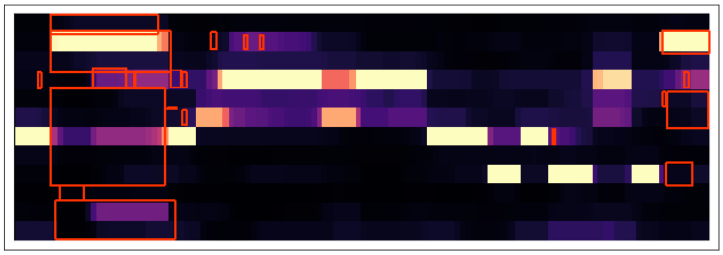
Run imageDiff

```
SSIM: 0.9220794266585013
```

Source1



Source2



Diff

Threshold