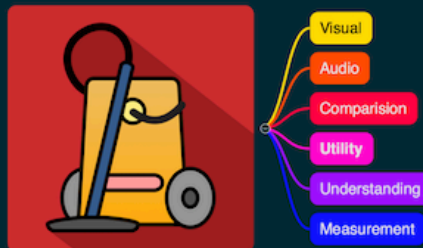


VACUUM - (tuneBuildTest_C_scale, e1)



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

A testing and analysis workflow

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Imports

```
Librosa  
IPython  
Numpy  
Scipy  
Matplotlib
```

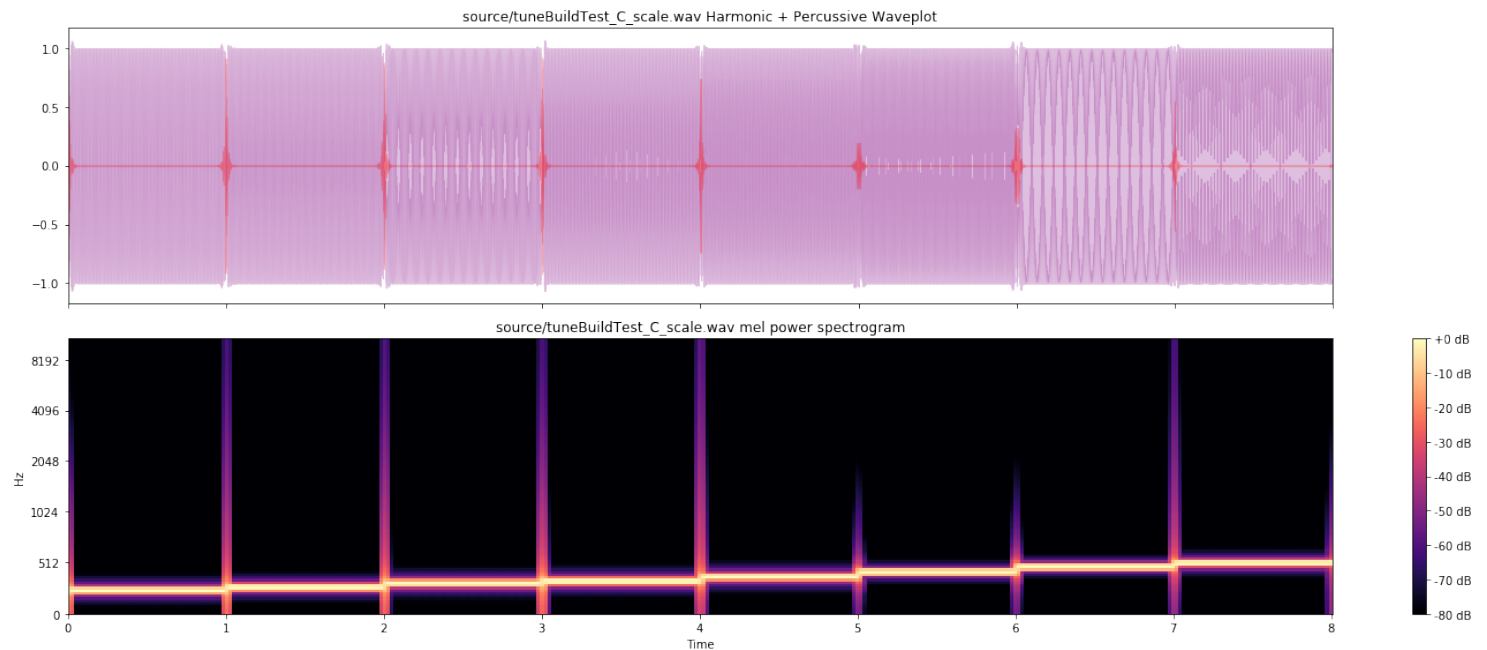
Let's bring the files in

Source1 Track (tuneBuildTest_C_scale.wav)

Open Source1, get some basic statistics and create a player

```
File: source/tuneBuildTest_C_scale.wav  
Duration: 8.0000 sec  
Tuning estimate: 0.010000000000000009
```

Let's take a first look at the file

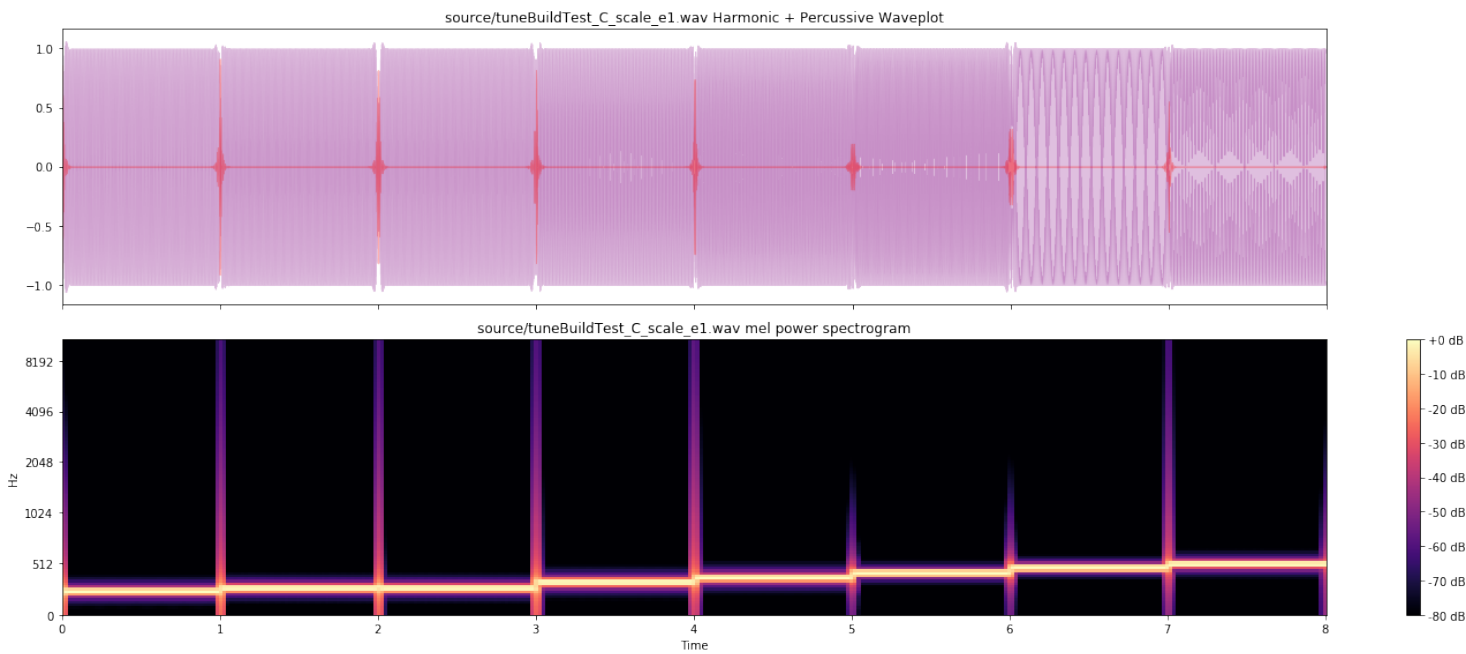


Source 2 Track (tuneBuildTest_C_scale_e1.wav)

Open Source2, get some basic statistics and create a player

```
File: source/tuneBuildTest_C_scale_e1.wav  
Duration: 8.0000 sec  
Tuning estimate: 0.010000000000000009
```

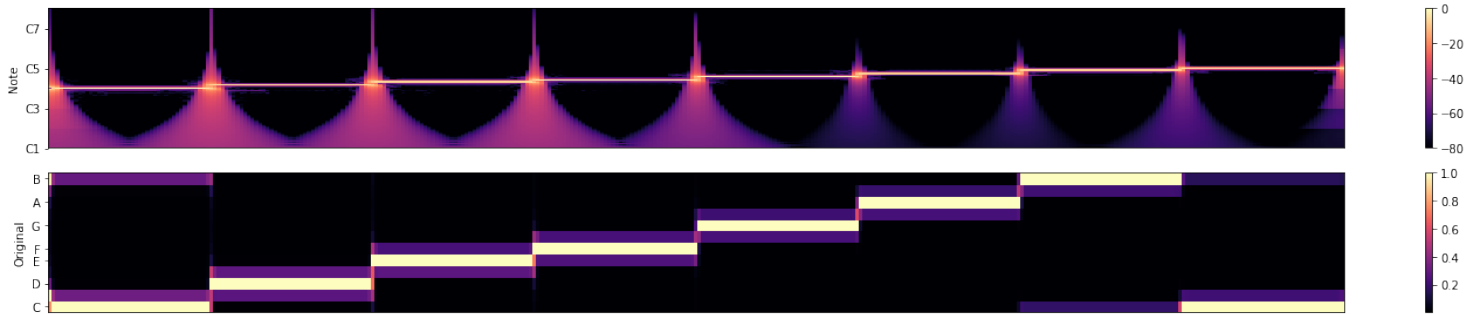
Let’s take a first look at the file



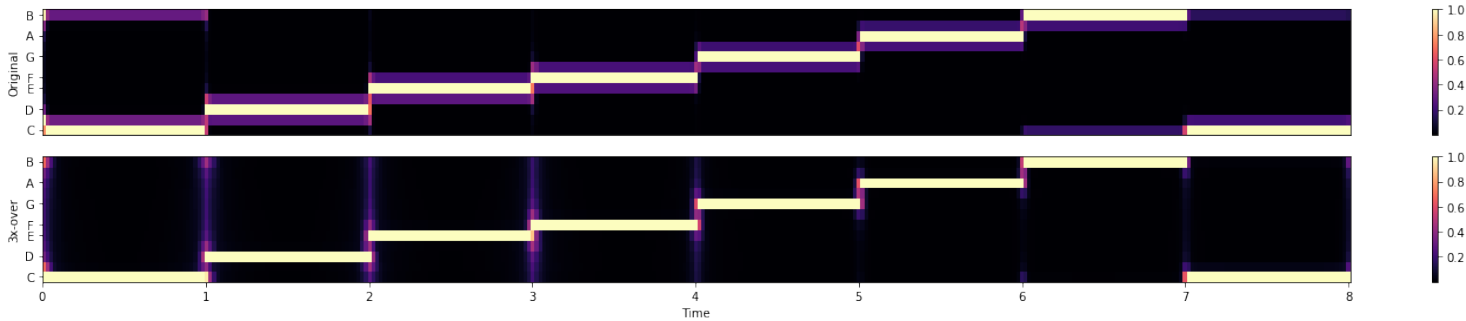
Enhanced chroma and chroma variants (source1)

Enhanced chroma and chroma variants

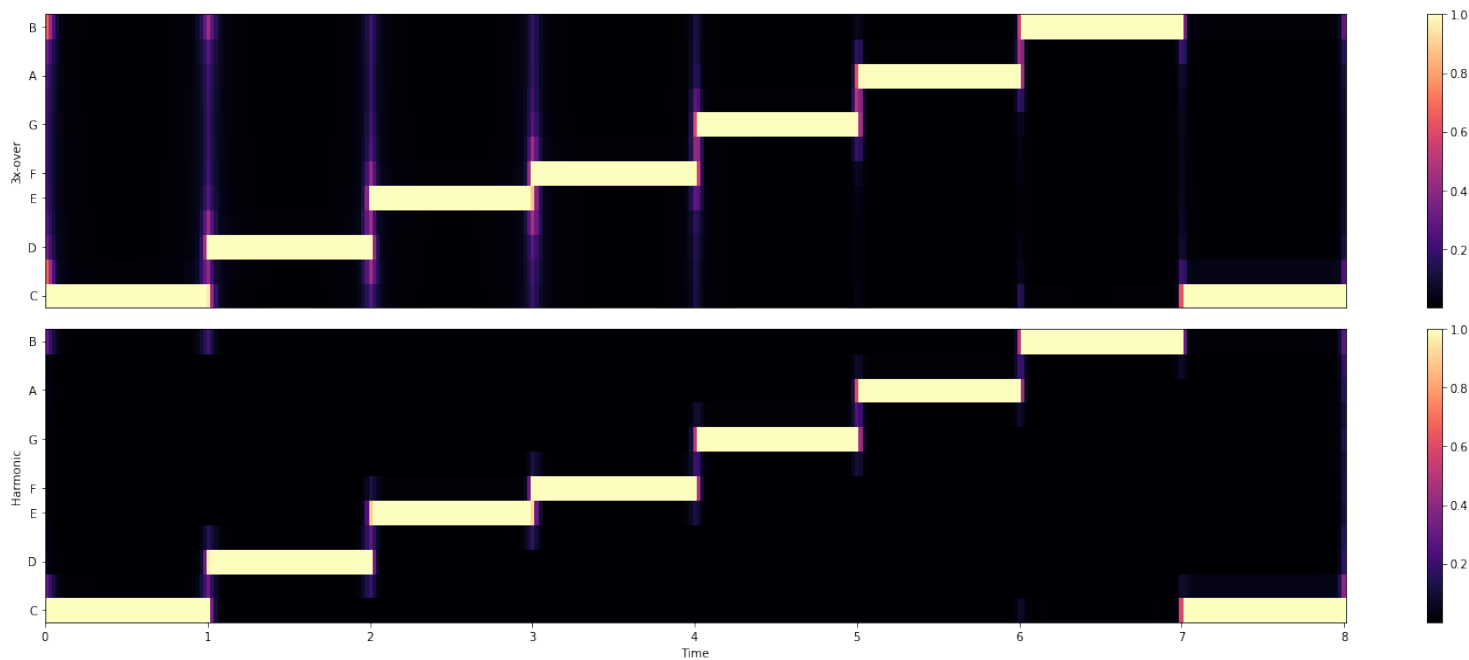
Original source1



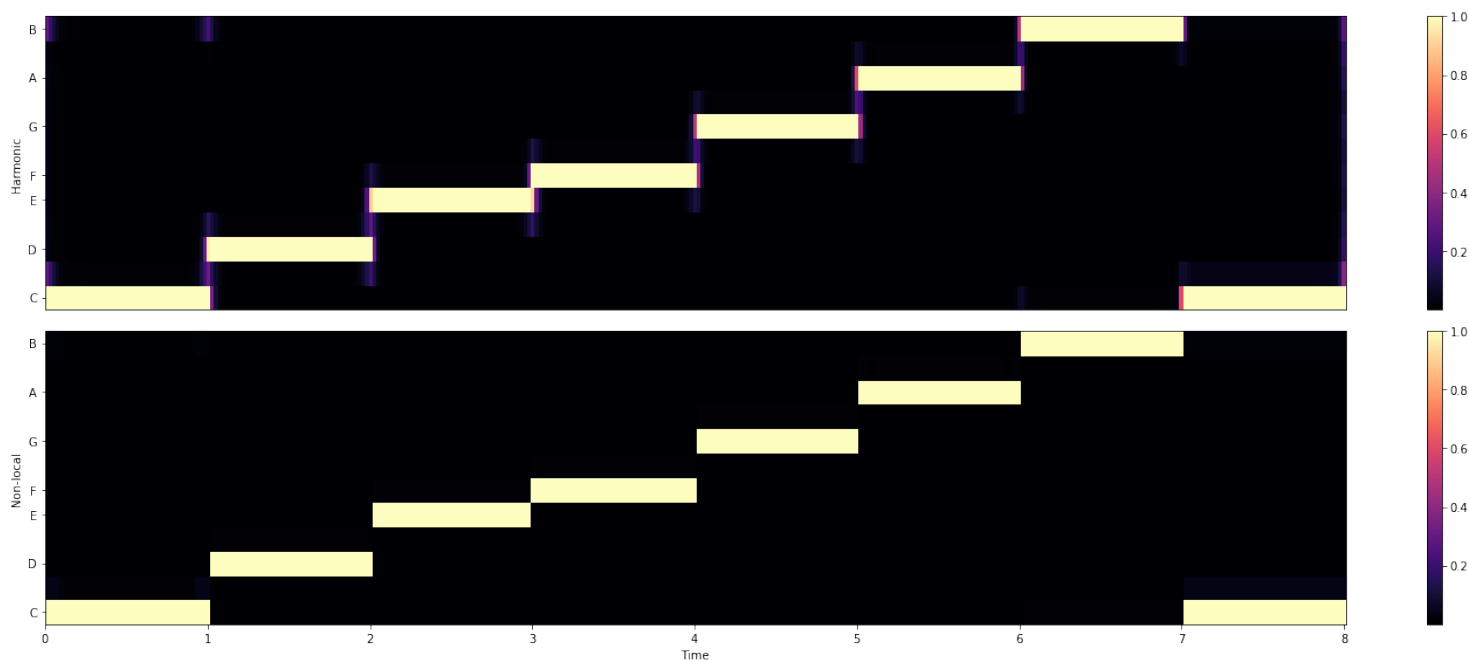
Correct Tuning Deviations



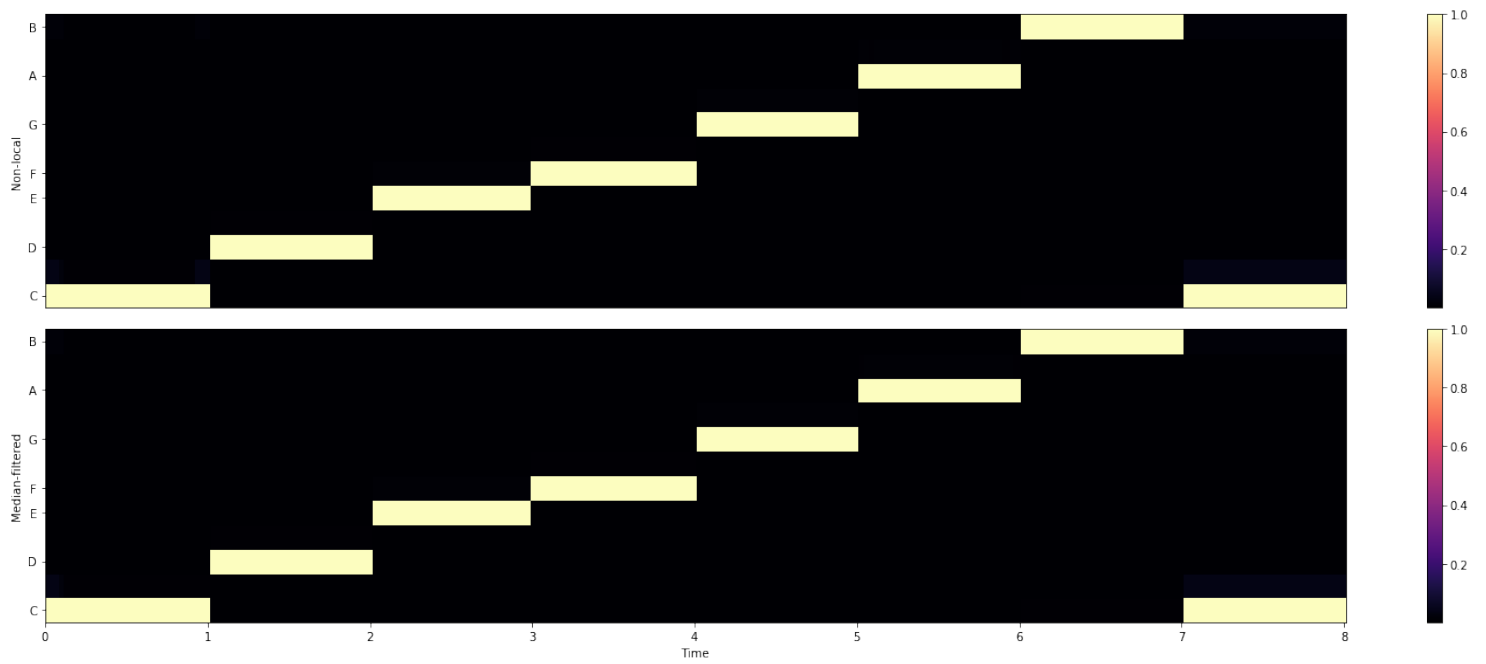
Isolate harmonic component



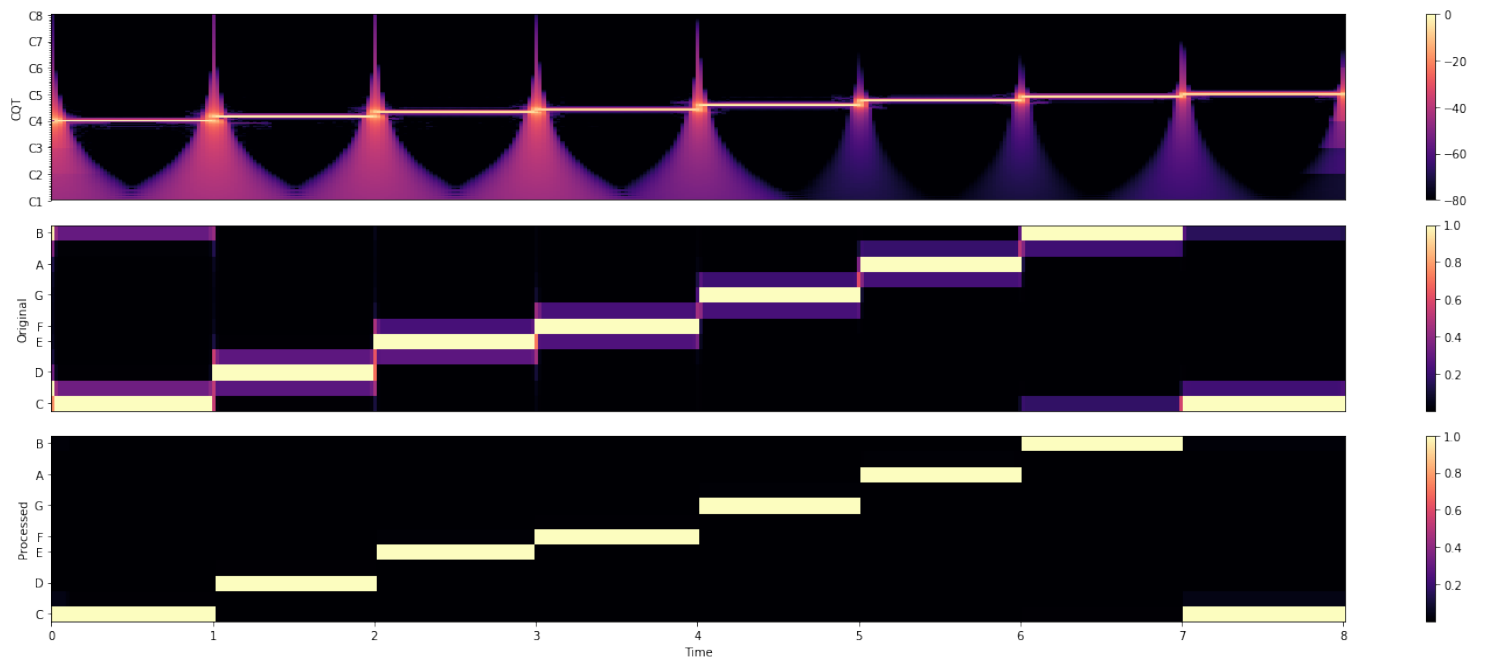
Non-local filtering



Horizontal Median Filter

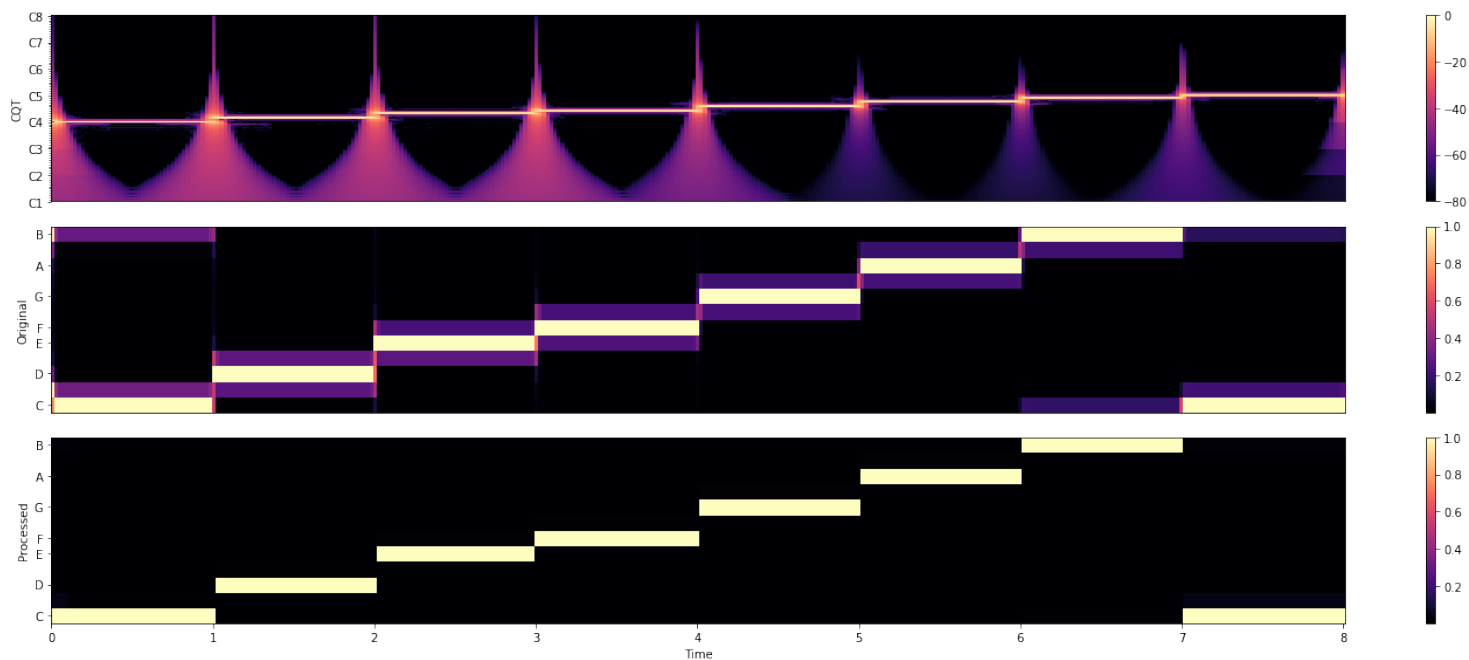


Before and After

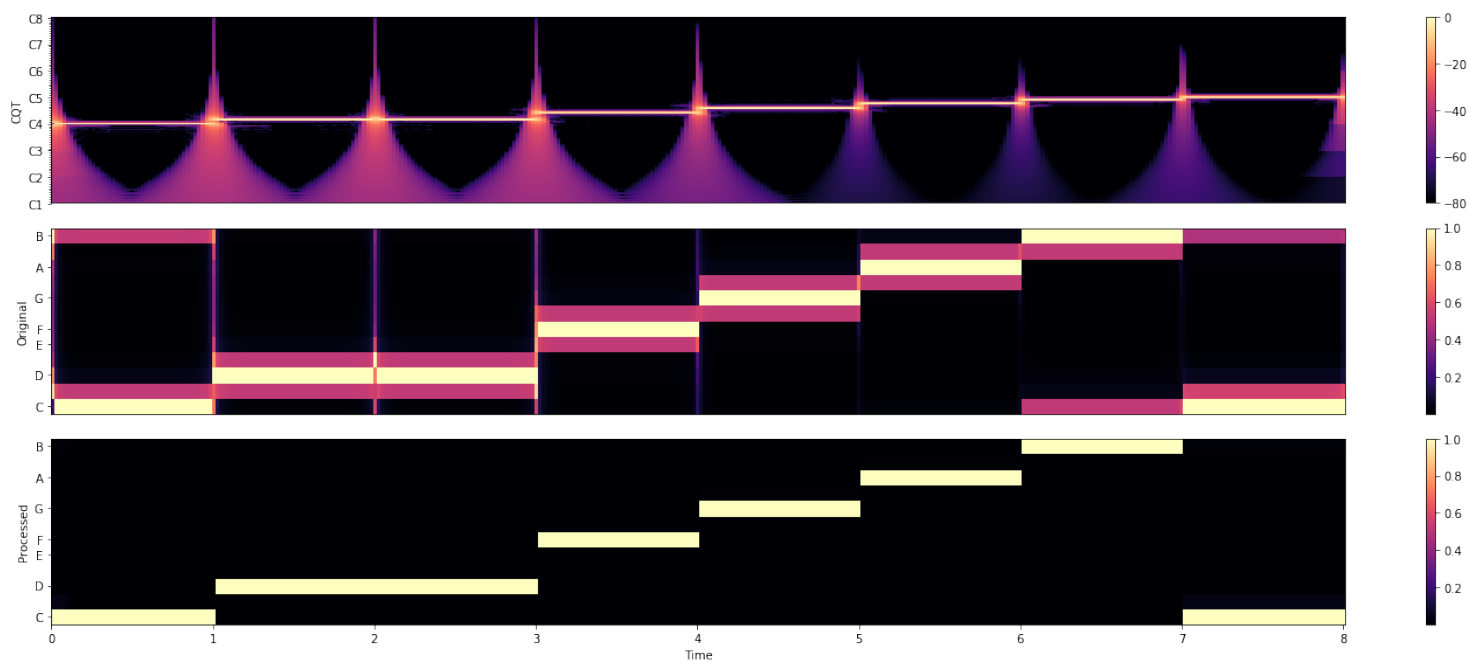


Applying chroma enhancement techniques to source files

Source1

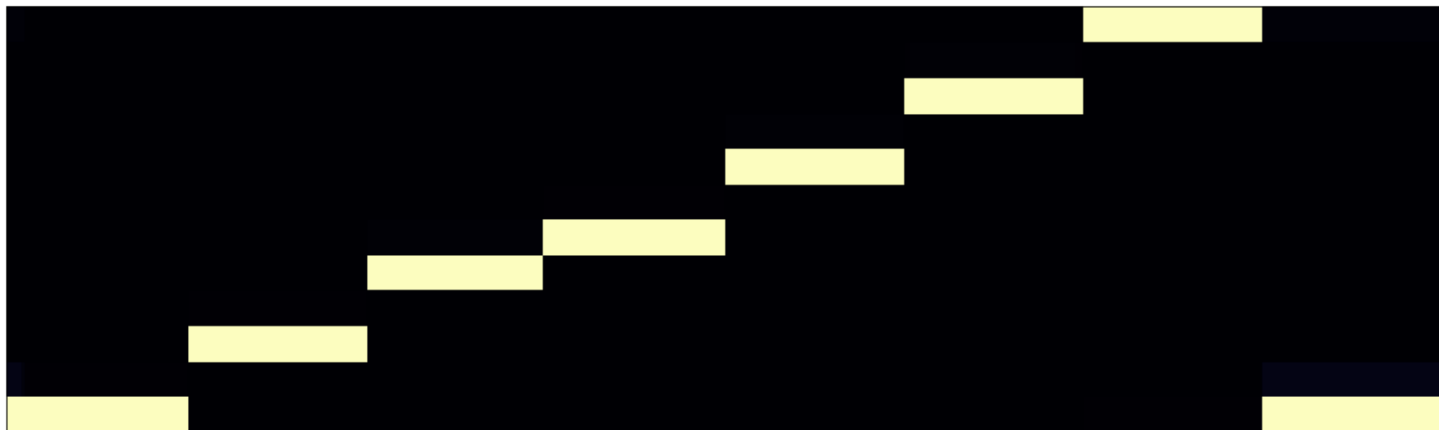


Source2

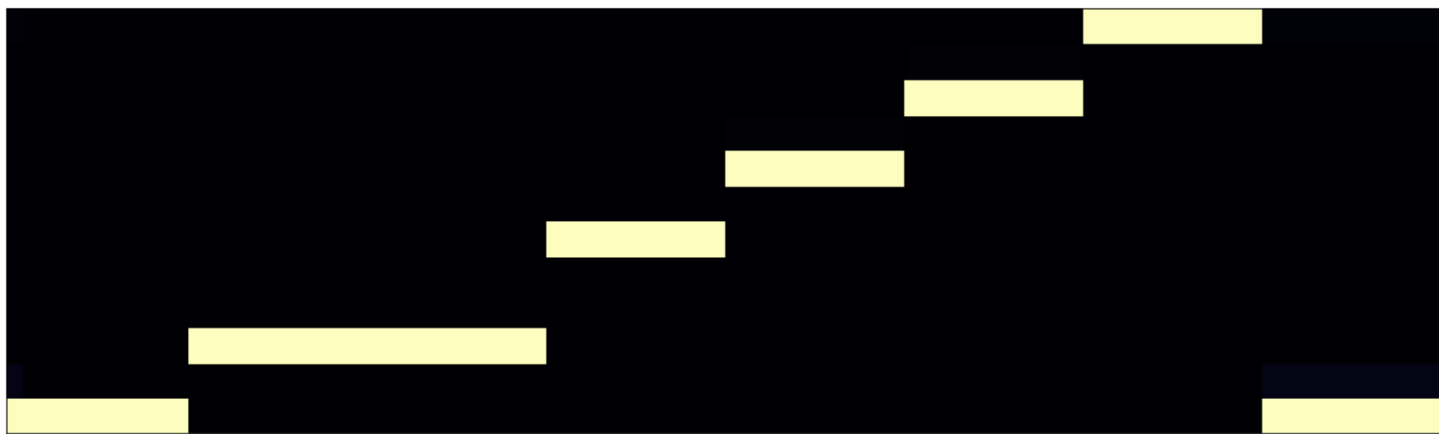


Output comparisons for testing

Source1



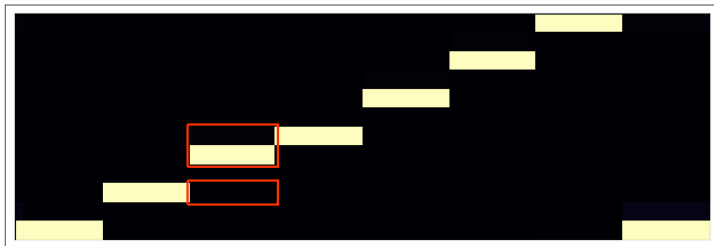
Source2



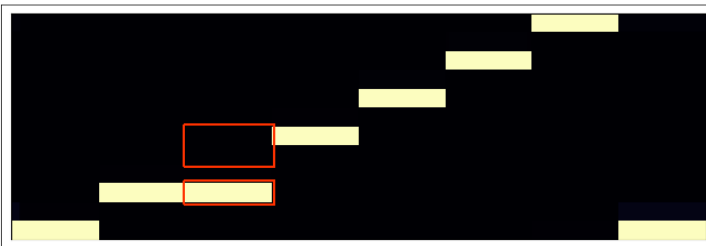
Run imageDiff

SSIM: 0.9711628166326922

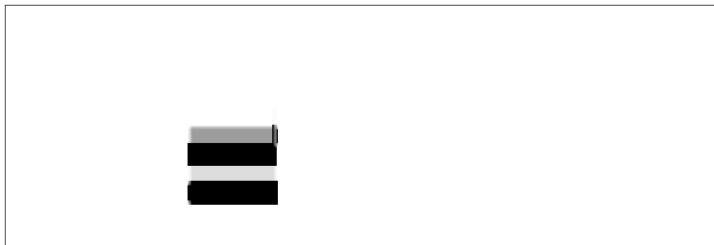
Source1



Source2



Diff



Threshold

