

Tony: a tool for melody transcription - Bug #868

funny candidate pitch track glitches

2014-02-04 06:05 PM - Matthias Mauch

Status:	Closed	Start date:	2014-02-04
Priority:	Normal	Due date:	
Assignee:	Matthias Mauch	% Done:	0%
Category:		Estimated time:	0.00 hour
Target version:			

Description

We observe that very often, the candidate pitch tracks obtained from pYIN are displayed incorrectly (or at least very implausibly) with large short upward bursts.

Why does this happen? Resolve it :)

Screen shot attached.

History

#1 - 2014-02-04 06:05 PM - Matthias Mauch

- Assignee set to Matthias Mauch

#2 - 2014-02-04 10:37 PM - Matthias Mauch

- File *pyin.dylib* added

Much improved now! There still are some glitches, but they also have to do with Tony not knowing how pYIN changes timestamps -- we'll have to take account of that sometime.

I upload a new version of *pyin*, will soon push to *pyin* repo as well.

#3 - 2014-02-05 11:23 AM - Chris Cannam

Did you push your latest changes? I'd like to test.

I notice the code currently in the repo has a nasty case of the unsigned-comparison bug:

<https://code.soundsoftware.ac.uk/projects/pyin/repository/entry/LocalCandidatePYIN.cpp#L352>

(Comparing an unsigned value against -1 for the loop termination condition. See e.g. <http://soundsoftware.ac.uk/c-pitfall-unsigned> for more on this subject)

#4 - 2014-02-07 12:04 PM - Matthias Mauch

I notice the code currently in the repo has a nasty case of the unsigned-comparison bug:

<https://code.soundsoftware.ac.uk/projects/pyin/repository/entry/LocalCandidatePYIN.cpp#L352>

That was indeed nasty. Made it less nasty. but it's still kinda a hack.

(Comparing an unsigned value against -1 for the loop termination condition. See e.g. <http://soundsoftware.ac.uk/c-pitfall-unsigned> for more on this subject)

Ok thanks.

I really want to find a more principled solution to the problem of multiple pitch tracks. Haven't yet.

#5 - 2014-02-18 06:54 PM - Justin Salamon

- File Screen Shot 2014-02-18 at 1.42.36 PM.png added

I was trying out Tony with a real 'test-case' - imagine pYin misses a small bit of melody, creating a discontinuity in the f0 curve, and I want to use Tony to fill in the missing gap, even if it's very small. I just tried doing this, and got the following back (see image attached). Any idea what's going on?

#6 - 2014-02-18 09:36 PM - Justin Salamon

- File Screen Shot 2014-02-18 at 4.20.07 PM.png added

Also, still some glitches? (see attached)

#7 - 2014-02-19 09:21 AM - Matthias Mauch

Yes, that's sad but true.

I think there are two things we need to do here:

- get a more principled approach to actually obtaining the candidates -- this is a bit silly to do with pyin as it is, actually, so I will need to think about it more clearly.
- make Tony understand the timestamps that pyin is using (pyin, knowing how YIN uses the spectrum, shifts the timestamps forward to coincide with where the temporal centroid of the YIN analysis is, i.e. one quarter block-size into the frame, and hence also returns them shifted forward... Tony doesn't know that yet).

So this is work for me and Chris respectively, I think. I hope I can work on this soon.

Cheers,
Matthias

#8 - 2014-02-19 06:23 PM - Matthias Mauch

I think I've done both now, see: <https://code.soundsoftware.ac.uk/issues/870>

Maybe that needs a review by Chris though...

#9 - 2019-11-22 02:24 PM - Chris Cannam

- Status changed from New to Closed

Downloads

tony_pyin_glitch.png	86.9 KB	2014-02-04	Matthias Mauch
pyin.dylib	249 KB	2014-02-04	Matthias Mauch
Screen Shot 2014-02-18 at 1.42.36 PM.png	115 KB	2014-02-18	Justin Salamon
Screen Shot 2014-02-18 at 4.20.07 PM.png	54.1 KB	2014-02-18	Justin Salamon