Tony: a tool for melody transcription - Feature #597
algorithm for interactive tracking

2013-06-19 10:04 AM - Matthias Mauch

Status:	New		**Start date:**	
Priority:	Normal		**Due date:**	
Assignee:	Matthias Mauch		**% Done:**	0%
Category:			**Estimated time:**	0.00 hour
Target version:				

Description

This is research. The idea is that the note and pitch track are modelled in one probabilistic model, which enables users to automatically update the pitch track by editing the note track and vice versa. Maybe some even funkier concepts.

History

#1 - 2013-06-28 04:48 PM - Matthias Mauch

- Due date set to 2013-08-31

- Priority changed from Normal to Low

- Estimated time set to 40.00

#2 - 2013-12-05 11:56 AM - Matthias Mauch

- Project changed from [tonioni] Tony: a tool for melody annotation to Tony: a tool for melody transcription

#3 - 2014-01-14 03:41 PM - Matthias Mauch

- Priority changed from Low to High

Changed this to high because it's likely to be important for the NYU project.

What would be relatively easy to do is this

  - select a time-pitch region (something like a rectangle in the main Tony pane.
    - this could be done by either directly selecting a rectangle, or by selecting a time region and then drag-moving the mouse to the centre of the desired vertical region
  - pYIN algorithm re-calculates the pitch (and note?) track for that time region with the constraint of being in the selected frequency region.

(I know the original idea was to focus on moving notes to then let the pitch track follow, but we don't need the notes as such for now -- selected rectangle is enough.)

Problems:

pYIN currently works as a Vamp plugin, i.e. Audio > Plugin > Tony. We need to have an interface that allows Tony to talk back to pYIN, something like Audio > Plugin < > Tony.

Do we need a different architecture for that? I anticipate two opinions:

  1. No. We can just add additional parameters to pYIN for minimum and maximum frequency. Then Tony can send only a limited part of the audio to pYIN (the selected time region) and update the values in that region accordingly.
  2. Yes. Doing it like above is a cheap hack, and will eventually leave us frustrated because
    - we cannot include more complex parameters (such as "for the first second, consider all frequencies, then for 0.35 seconds only the ones selected, and then another second of all frequencies")

#4 - 2014-01-14 03:43 PM - Matthias Mauch

- Subject changed from algorithm for interactive pitch and note tracking to algorithm for interactive tracking

changed title to reflect slightly new angle

#5 - 2014-01-14 07:00 PM - Matthias Mauch

Someone did something like that last year at SMC:

SEMI-AUTOMATIC MELODY EXTRACTION USING NOTE ONSET TIME
AND PITCH INFORMATION FROM USERS
http://smcnetwork.org/system/files/SEMI-AUTOMATIC%20MELODY%20EXTRACTION%20USING%20NOTE%20ONSET%20TIME%20AND%20PIT
H%20INFORMATION%20FROM%20USERS.pdf

#6 - 2014-01-23 12:58 AM - Justin Salamon

Another interface for interactive melody extraction:

http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=5430181&tag=1