

# pYIN — pitch and note tracking in monophonic audio - Bug #829

## pYIN explodes when presented with a longish file

2013-12-07 03:24 PM - Chris Cannam

<b>Status:</b>	New	<b>Start date:</b>	2013-12-07
<b>Priority:</b>	High	<b>Due date:</b>	
<b>Assignee:</b>		<b>% Done:</b>	0%
<b>Category:</b>		<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>			

### Description

Just tested Tony with a few audio files on Windows, and found that it blows up during the getRemainingFeatures call ("Windows Runtime has requested" etc, so probably an exception) when asked to extract features from a file of around 10 minutes duration. It was fine with files of 3 minutes or so.

(The longer file was "Nothin But Time" by Cat Power, in case it turns out that something other than duration is the cause)

### History

#### #1 - 2014-01-18 04:27 PM - Matthias Mauch

I couldn't really reproduce the exception, but I see that in getRemainingFeatures, memory usage is very high (>1.4GB).

Now it's not super-straight-forward to get around that if we keep the HMM as it is because we store two matrices (one float, one int) that have nFrame x nState elements. That's 960 or so states, and approx. 100,000 frames in 10 minutes, i.e. 96 million elements -- is that around 360MB in floats just for the one? Well, anyway, lots.

Two ways around that:

- calculate observation probability on the fly -- that still leaves us with the int matrix ("psi" in the viterbi algorithm)
- do a local Viterbi (fixed-lag smoothing)

--- things to think about.