

## Installing and using CMU pocketsphinx on Unix like systems

1. Prior to installation, you will have to download and install it.

```
$ sudo apt-get install gstreamer0.10-plugins-base
```

2. Download the latest sources of sphinx base and pocketsphinx

```
http://sourceforge.net/projects/cmusphinx/files/sphinxbase/
```

```
http://sourceforge.net/projects/cmusphinx/files/pocketsphinx/
```

3. unpack and install

```
$ tar xvf sphinxbase-0.8.tar.gz
```

```
$ cd sphinxbase-0.8
```

```
$/configure
```

```
$ make
```

```
$ sudo make install
```

```
$ tar xvf pocketsphinx-0.8.tar.gz
```

```
$ cd pocketsphinx-0.8/
```

```
$/configure
```

```
$ make
```

```
$ sudo make install
```

4. Make sure you have paths configured correctly in your ~/.bashrc file:

```
export LD_LIBRARY_PATH=/usr/local/lib
```

```
export PATH=$PATH:/usr/local/lib:/usr/local
```

5. Use ipython to test:

```
In[1]: import sphinxbase
```

```
In[2]: import pocketsphinx as ps
```

- 5.1 if you get the below error:

**ValueError: PyCapsule\_GetPointer called with invalid PyCapsule object**

- 5.2 Reason and solution:

```
sudo python setup.py install
```

The C source files emitted by Cython need to be regenerated and then sphinxbase and pocketsphinx need to be rebuilt to correct the exception on import.

- a. Delete 'python/sphinxbase.c' from the sphinxbase source directory and delete 'python/pocketsphinx.c' from the pocketsphinx source directory.

- b. Make sure Cython is installed so these files can be regenerated.

```
sudo apt-get install Cython
```

c. Next, just `./configure`, make clean all, and make install as outlined in each README. Your version of Cython will be invoked to regenerate the files you deleted.

d. Then, `sudo python setup.py install`

Above steps should solve the import error.

Overall steps:

```
In[1]:import sphinxbase
In[2]:import pocketsphinx as ps
In[3]:hmm='/home/bala/cmuspinx/pocketsphinx-0.8/model/hmm/en_US/hub4wsj_sc_8k'
In[4]:lmd='/home/bala/cmuspinx/pocketsphinx-0.8/model/lm/en_US/language_model.arpaformat.DMP'
In[5]:dictd='/home/bala/cmuspinx/pocketsphinx-0.8/model/lm/en_US/cmudict.hub4.06d.dict'
In[6]:wavfile= file('/home/bala/cmuspinx/pocketsphinx-0.8/test/data/testCMU01_RAW.wav','rb')
In[7]:speechRec = ps.Decoder(hmm = hmm, lm = lmdir, dict = dictp)
In[8]:wavFile.seek(44)
In[9]:speechRec.decode_raw(wavFile)
{ produces several programs logs }

In[10]:speechRec.get_hyp()
```

Sample output:

```
{produces several programs logs after-which you will see the output something like this:}
("ONE ULYSSES BY JAMES JOYCE TO THE GREAT GATSBY BY F. SCOTT FITZGERALD THREE THE PORTRAIT
OF THE ARTIST AS A YOUNG MAN BY JAMES JOYCE FOR THE LEADER BY VLADIMIR NABOKOV TO FIVE
FACTORIES IN THE WORLD BY ALL PERFECTLY SHAPED THE SOUND AND FURY BY WILLIAM FAULKNER SAID
AND CATCH TWENTY TWO BY JOSEPH HELLER EIGHT DARKNESS AT NOON BUT ARTHUR KESSLER'S NOT IN
SOME SETTLERS BY D. H. LAWRENCE NEW YEAR OF THE GRAPES OF WRATH BY JOHN STEINBECK",
'000000000',
-494851)
```



## Installing and using CMU pocketsphinx On windows:

1. Make sub directory CMUSphinx: Mine is [c:\CMUSphinx](#)
2. From <http://cmusphinx.sourceforge.net/wiki/download/>, download snapshot of pocketsphinx, sphinxbase, and sphinxtrain to your CMUSphinx directory
3. You need Perl and Python

3.1 For Perl, get activates active Perl:  
<http://www.activestate.com/activeperl/downloads>

3.2 For python get v2.7.X go to <http://www.python.org/getit/>

Note audio file in CMUSphinx\pocketsphinx\test\data\ testCMU01\_RAW.wav

4. Open terminal and Change directory to c:\CMUSphinx\pocketsphinx\bin\Release

Pocketsphinx\_batch.exe should be there, unless compile failed

5. Make file ctlFile.txt with text of the name of the file we will decode

testCMU01\_RAW

6. Make file called argFile.txt with contents (more about these later)

```
-hmm ../../model/hmm/en_US/hub4wsj_sc_8k
-lm ../../model/lm/en_US/language_model.arpafmt.DMP
-dict ../../model/lm/en_US/cmudict.hub4.06d.dict
```

7. run

```
C:\CMUSphinx\pocketsphinx-0.8-win32\bin\Release> pocketsphinx_batch.exe -argfile
argFile.txt -cepdir ../../test/data -ctl ctlFile.txt -cepext .wav -adcin true -h
yp testCMUMu_Law.txt
```

Note: the command line arguments must be in this order!!

Where:

-argfile argFile.txt defines the name of the arguments file. These arguments are displayed on the screen when the program runs. You can check if they match

-cepdir ../../test/data defines the path to the files to be processed

-cepdir must come before -ctl

-ctl ctlFile.txt defines the ctlFile, which contains the name of the files to process. These names cannot have the path or the extension

-cepest .wav defines the extension of the files in the ctlFile

-adcin true means that the files are audio files

-hyp testCMUMu\_Law.txt defines the output file

More details on the parameters are

[http://manpages.ubuntu.com/manpages/lucid/man1/pocketsphinx\\_batch.1.html](http://manpages.ubuntu.com/manpages/lucid/man1/pocketsphinx_batch.1.html)

8. After running, the out file contains

ONE ULYSSES BY JAMES JOYCE TO THE GREAT GATSBY BY F. SCOTT FITZGERALD THREE THE PORTRAIT  
OF THE ARTIST AS A YOUNG MAN BY JAMES JOYCE FOR THE LEAD AND BY VLADIMIR NABOKOV FIVE  
FACTORIES IN THE WORLD BY ALL THE SOCKS LEAST SIX THE SOUND AND FURY BY WILLIAM FAULKNER  
SAID AND CATCH TWENTY TWO BY JOSEPH HELLER EIGHT DARKNESS AT NOON BUT ARTHUR KESSLER NINE  
TWO OF THE LETTERS BY D. H. LAWRENCE THE RULE THE GREAT SUPPRESSED BY JOHN STEINBECK  
(testCMU01\_RAW -496791)

How this works:

<http://cmusphinx.sourceforge.net/wiki/tutorial>

<http://cmusphinx.sourceforge.net/wiki/tutorialconcepts>

~ Bala

End of document