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Pocketsphinx - Adding words and Improving accuracy

Ask Question



17



5

I've managed to finally build and run
pocketsphinx
(pocketsphinx_continuous). The
problem I'm running into, is how to a
improve accuracy. From what I
understand, you can specify a
dictionary file (-dict test.dic). So I took
the default dictionary file and added
some more pronunciations of the
same words, for example:

```
pencil P EH N S AH L  
pencil(2) P EH N S IH L
```

```
spaghetti S P AH G EH T IY  
spaghetti(2) S P UH G EH T IY
```

Yet pocketsphinx still does not
recognize either word at all. I know
there is a jsf file you can specify as
well , but that seems more for
phrases and grammar. How can I get
pocketsphinx to recognize common
words such as pencil and spaghetti?

thanks

-Mike

sphinx

speech-recognition

speech-to-text

edited Aug 13 '13 at 20:25



f3lix

24k

10

56

78

asked Dec 26 '10 at 20:02



Mike6679

2,060

12

46

86

Anyone? anyone?..... -

Mike6679 Dec 29 '10 at 18:37

Android. I want to do the same thing and I am having problem to build "PocketSphinxAndroidDemo" downloaded from cmusphinx.sourceforge.net. Could you share your experience and list the steps on how you did it? What's "pocketsphinx_continuous"? Is that a different branch of pocketsphinx? Thanks! gwofu – [user602410](#) Feb 4 '11 at 1:04

[user602410](#):
pocketsphinx_continuous is a program included with the pocketsphinx distribution. – [Jeremy Salwen](#) May 18 '11 at 4:02

5 Answers



8



With something like this, you can't be certain, but I can offer the following suggestions:

1. Perhaps the language model somehow has low probabilities for "spaghetti" and "pencil". As you suggested, you could use a JSGF to test out how it does for recognition if it doesn't use the N-gram models, but instead does a simple grammar (give it like twenty words, including spaghetti and pencil). This way you can see if it is perhaps the language model which makes it difficult to recognize these words, and it can do okay if it considers all the words to have equal probability.
2. Perhaps you simply pronounce these words poorly, even with the alternative dictionary entries. Try either A. Testing other peoples' voices, or B. Adapting the acoustic model to your voice (see <http://cmusphinx.sourceforge.net/wiki/tutorialam>)
3. Also, what is it recognizing them as when it is failing? If possible, remove the words it misrecognizes as from the dictionary.

Again, for overall accuracy, only three things are going to really help you: restricting the grammar,

adapting the accoustic model, and perhaps getting higher quality recording input.

answered May 18 '11 at 4:10



Jeremy Salwen

4,885 2 35 59

```
36 if (dev.isBored() || job.sucks()) {
37     searchJobs({flexibleHours: true, compa
38 }
39 // A career site that's by developers, fo
```



To improve accuracy you may want to try adapting the acoustic model to your voice.

7

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



To learn how to add new words:
<http://ghatage.com/tech/2012/12/13/Make-Pocketsphinx-recognize-new-words/>

edited Jan 20 '17 at 17:49



Rosário Pereira Fernandes

6,022 6 23 52

answered Dec 25 '12 at 7:39



Anup

99 1 4

The link to learn how to add new words gives a 404. Do you know if we can find it anywhere else? – Edu Zamora Aug 19 '14 at 9:28

Not to revive a dead thread, but the URL appears to be:
ghatage.com/2012/12/13/Make-Pocketsphinx-recognize-new-words – OldWolf Sep 21 '15 at 15:07

The correct link is -
ghatage.com/tech/2012/12/13/...
Seems like the permalink structure was changed. – sabergeek Sep 14 '16 at 6:26



Make sure you put a tab (not a space) after the word and before the start of the pronunciation.

2



May be the problem is with Pocketsphinx. I too was not getting good results with Pocketsphinx. But I was getting very good accuracy with Sphinx4 (for a US speaker with a noise-cancelling microphone.) Therefore I did a comparison between the two using the same audio recordings. For pocketsphinx I used pocketsphinx_batch with the WSJ audio model and a small vocabulary language model and dictionary (created online with the CMU Cambridge language modelling toolkit.) For Sphinx4 I wrote a small Java program using the Sphinx4 library. The result was that Sphinx4 was much more accurate. All the gory details are at <http://www.jaivox.com/pocketsphinx.html>.

answered Jan 8 '13 at 2:12



vjaivox
41 2

interesting, thanks for sharing! –
[Mike6679](#) Jan 8 '13 at 14:53



To achieve good accuracy with a pocketshinx:

- Important! Check that your mic, audio device, file supports and 16 kHz while general model is trained with such acoustic examples.
- You should create your **own limited dictionary** you cannot use cmusphinx-voxforge-de.dic while accuracy is dramatically dropped.
- You should create your own language model.

You can search for Jasper [project on GitLab](#) to see how it's implemented. Or you can use check the [documentation](#)



levgen Naida

2,376 5 54 106
