Speech Recognition on the Raspberry Pi

Speech recognition on the Raspberry Pi using the CMU Sphinx tools

or

How to use government funded software written by graduate students to build your own voice controlled robot

Speech Recognition on the Raspberry Pi

- Overview of the CMU Sphinx tools
- Building and installing sphinxbase
- Building and installing pocketsphinx
- Creating a language model on the web
- Using a language model from the web
- Building and installing the language model toolkit
- Using a language model created locally

Overview of the CMU Sphinx tools

- Home page: http://cmusphinx.sourceforge.net/
- Pocketsphinx: A recognizer library written in C
- http://downloads.sourceforge.net/project/cmusphinx/pocketsphinx/0.7/pocketsphinx-0.7.tar.gz
- Sphinxbase: A support library required by Pocketsphinx
- http://downloads.sourceforge.net/project/cmusphinx/sphinxbase/0.7/sphinxbase-0.7.tar.gz

Building and installing sphinxbase

- wget -c <sphinxbase-0.7>
- tar zxvf <sphinxbase-0.7>
- pushd sphinxbase-0.7
- ./configure
- make
- sudo make install

Building and installing pocketsphinx

- wget -c <pocketsphinx-0.7>
- tar zxvf <pocketsphinx-0.7>
- pushd pocketsphinx-0.7
- ./configure
- make
- sudo make install

Create a language model on the web

- Sphinx Knowledge Base Tool
- http://www.speech.cs.cmu.edu/tools/lmtool-new.html
- From the site: To use, create a sentence corpus file, consisting of all sentences you would like the decoder to recognize...
- Upload your corpus and receive a link to download the language model files

Using a language model from the web

- mkdir <language model directory>
- pushd <language model directory>
- wget -c <language model tarball>
- tar zxvf <language model tarball>
- cd <language model directory>
- ../speech-to-text
- Start talking

Building and installing the language model toolkit

- The CMU-Cambridge Statistical Language Modeling Toolkit
- http://www.speech.cs.cmu.edu/SLM/toolkit_documentation.html
- http://downloads.sourceforge.net/project/cmusphinx/cmuclmtk/0.7/cmuclmtk-0.7.tar.gz
- wget -c <cmuclmtk-0.7>
- tar zxvf <cmuclmtk-0.7>
- pushd cmuclmtk-0.7
- ./configure
- make
- sudo make install

Using a language model created locally

- cd <directory>
- ./mklm
- ./mkdict
- ../speech-to-text
- Start talking

Questions and Answers

- My name is David Cullen
- developer@kerneldriver.org
- Your question here