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kaldi安装过程

整理人 课程助教

纲要

- **步骤一：** 下载kaldi的文件
- **步骤二：** 进入tools，根据指令执行编译
- **步骤三：** 进入src，按照指令安装
- **步骤四：** 检查是否确实安装成功

步骤一：下载kaldi的文件

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- git clone https://github.com/kaldi-asr/kaldi.git

步骤二：进入tools，根据指令执行编译

- cd tools
- cat INSTALL
- extras/check_dependencies.sh
- #检查依赖性，缺少的包可以根据相应指令安装,如果都已经安装无视下面的安装指令：
- sudo apt-get install subversion
- sudo apt-get install automake
- sudo apt-get install autoconf
- sudo apt-get install libtool
- sudo apt-get install g++
- sudo apt-get install wget
- sudo apt-get install libatlas-dev
- sudo apt-get install libatlas-base-dev
- sudo apt-get install zlib1g
- sudo apt-get install zlib1g-dev
-
- make -j 4

步骤三：进入src，按照指令安装

- cd src
- cat INSTALL
-
- ./configure --shared
- make -j 8

步骤三：进入src，按照指令安装

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- 如果遇到以下问题：

1.缺少cublas相应包

```
cu-device.cc:26:23: fatal error: cublas_v2.h: No such file or directory
compilation terminated.
../makefiles/default_rules.mk:141: recipe for target 'depend' failed
make[1]: *** [depend] Error 1
make[1]: Leaving directory '/home/zhangying09/.jupyter/kaldi-master/src/cudamatrix'
Makefile:127: recipe for target 'cudamatrix/depend' failed
make: *** [cudamatrix/depend] Error 2
In file included from ../cudamatrix/cu-matrix.h:34:0,
                 from ../nnet/nnet-component.h:30,
                 from ../nnet/nnet-nnet.h:32,
                 from nnet-set-learnrate.cc:22:
../cudamatrix/cu-common.h:33:23: fatal error: cublas_v2.h: No such file or directory
compilation terminated.
In file included from ../cudamatrix/cu-matrix.h:34:0,
                 from ../nnet/nnet-component.h:30,
                 from ../nnet/nnet-nnet.h:32,
                 from cmvn-to-nnet.cc:22:
../cudamatrix/cu-common.h:33:23: fatal error: cublas_v2.h: No such file or directory
compilation terminated.
In file included from ../cudamatrix/cu-matrix.h:34:0,
                 from ../nnet/nnet-component.h:30,
                 from ../nnet/nnet-nnet.h:32,
                 from nnet-forward.cc:22:
../cudamatrix/cu-common.h:33:23: fatal error: cublas_v2.h: No such file or directory
compilation terminated.
In file included from ../cudamatrix/cu-matrix.h:34:0,
                 from ../nnet/nnet-component.h:30,
                 from nnet-train-mmi-sequential.cc:33:
../cudamatrix/cu-common.h:33:23: fatal error: cublas_v2.h: No such file or directory
compilation terminated.
../makefiles/default_rules.mk:141: recipe for target 'depend' failed
```


- 原因：cuda安装的版本没有cublas的依赖包，更新cuda至有依赖的版本
- 解决：apt-get upgrade cuda
- 然后再次make即可

步骤三：进入src，按照指令安装

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2. aclocal-1.14: command not found

```
tools/openfst-1.6.7/missing: line 81: aclocal-1.14: command not found
WARNING: 'aclocal-1.14' is missing on your system.
         You should only need it if you modified 'acinclude.m4' or
         'configure.ac' or m4 files included by 'configure.ac'.
         The 'aclocal' program is part of the GNU Automake package:
         <http://www.gnu.org/software/automake>
         It also requires GNU Autoconf, GNU m4 and Perl in order to run:
         <http://www.gnu.org/software/autoconf>
         <http://www.gnu.org/software/m4/>
         <http://www.perl.org/>
```

复制

- 解决方法：去tools/openfst中运行命令
- autoreconf –ivf
- 会出现一下信息,说明已经修改成功了，之后就可以在tools文件夹下面直接运行make -j 16多线程编译了：

步骤三：进入src，按照指令安装

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```
autoreconf: Entering directory `.'
autoreconf: configure.ac: not using Gettext
autoreconf: running: aclocal --force -I m4
autoreconf: configure.ac: tracing
autoreconf: running: libtoolize --copy --force
libtoolize: putting auxiliary files in '.'.
libtoolize: copying file './ltmain.sh'
libtoolize: putting macros in AC_CONFIG_MACRO_DIRS, 'm4'.
libtoolize: copying file 'm4/libtool.m4'
libtoolize: copying file 'm4/ltoptions.m4'
libtoolize: copying file 'm4/ltsugar.m4'
libtoolize: copying file 'm4/ltversion.m4'
libtoolize: copying file 'm4/lt~obsolete.m4'
autoreconf: running: /usr/bin/autoconf --force
autoreconf: running: /usr/bin/autoheader --force
autoreconf: running: automake --add-missing --copy --force-missing
configure.ac:3: installing './compile'
configure.ac:2: installing './missing'
src/bin/Makefile.am: installing './depcomp'
autoreconf: Leaving directory `.'
```

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- 如果还遇到其他错误，可以百度查找错误或者去kaldi社区提问。

步骤四：检查是否确实安装成功

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- 跑一个小程序：
- cd egs/yesno/s5
- sh run.sh
-
- 输出显示如下，则安装成功：

```
0.5342 -0.000422432
HCLGa is not stochastic
add-self-loops --self-loop-scale=0.1 --reorder=true exp/mono0a/final.mdl exp/mono0a/graph_tgpr/HCLGa.fst
steps/decode.sh --nj 1 --cmd utils/run.pl exp/mono0a/graph_tgpr data/test_yesno exp/mono0a/decode_test_yesno
decode.sh: feature type is delta
steps/diagnostic/analyze_lats.sh --cmd utils/run.pl exp/mono0a/graph_tgpr exp/mono0a/decode_test_yesno
steps/diagnostic/analyze_lats.sh: see stats in exp/mono0a/decode_test_yesno/log/analyze_alignments.log
Overall, lattice depth (10,50,90-percentile)=(1,1,2) and mean=1.2
steps/diagnostic/analyze_lats.sh: see stats in exp/mono0a/decode_test_yesno/log/analyze_lattice_depth_stats.log
local/score.sh --cmd utils/run.pl data/test_yesno exp/mono0a/graph_tgpr exp/mono0a/decode_test_yesno
local/score.sh: scoring with word insertion penalty=0.0,0.5,1.0
%WER 0.00 [ 0 / 232, 0 ins, 0 del, 0 sub ] exp/mono0a/decode_test_yesno/wer_10_0.0
```

步骤四：检查是否确实安装成功

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- 或者检查生成文件：
- cd src/bin
- 各种编译之后的可执行文件已经存在，则安装成功：

```
root@kml-dtmachine-618:/home/zhangying09/.jupyter/kaldi-master/src/bin# ls
Makefile                    compare-int-vector.o          est-lda.o
acc-lda                     compile-graph                 est-mllt
acc-lda.cc                  compile-graph.cc              est-mllt.cc
acc-lda.o                   compile-graph.o               est-mllt.o
acc-tree-stats              compile-questions             est-pca
acc-tree-stats.cc           compile-questions.cc          est-pca.cc
acc-tree-stats.o            compile-questions.o           est-pca.o
add-self-loops              compile-train-graphs          get-post-on-ali
add-self-loops.cc           compile-train-graphs-fsts     get-post-on-ali.cc
add-self-loops.o            compile-train-graphs-fsts.cc  get-post-on-ali.o
ali-to-pdf                  compile-train-graphs-fsts.o   hmm-info
ali-to-pdf.cc               compile-train-graphs.cc       hmm-info.cc
ali-to-pdf.o                compile-train-graphs.o        hmm-info.o
ali-to-phones               compute-wer                   latgen-faster-mapped
ali-to-phones.cc            compute-wer-bootci            latgen-faster-mapped-pa
ali-to-phones.o             compute-wer-bootci.cc         latgen-faster-mapped-pa
ali-to-post                 compute-wer-bootci.o          latgen-faster-mapped-pa
ali-to-post.cc              compute-wer.cc                latgen-faster-mapped.cc
```

步骤四：检查是否确实安装成功

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- cd src
- featbin/copy-feats

```
featbin/copy-feats

Copy features [and possibly change format]
Usage: copy-feats [options] <feature-rspecifier> <feature-wspecifier>
or:   copy-feats [options] <feats-rxfilename> <feats-wxfilename>
e.g.: copy-feats ark:- ark,scp:foo.ark,foo.scp
 or: copy-feats ark:foo.ark ark,t:txt.ark
See also: copy-matrix, copy-feats-to-htk, copy-feats-to-sphinx, select-feats,
extract-feature-segments, subset-feats, subsample-feats, splice-feats, paste-feats,
concat-feats

Options:
  --binary                    : Binary-mode output (not relevant if writing to archive
  --compress                  : If true, write output in compressed form(only currentl
t,output) (bool, default = false)
  --compression-method        : Only relevant if --compress=true; the method (1 throug
essionMethod in src/matrix/compressed-matrix.h. (int, default = 1)
  --htk-in                    : Read input as HTK features (bool, default = false)
  --sphinx-in                 : Read input as Sphinx features (bool, default = false)
  --write-num-frames          : Wspecifier to write length in frames of each utterance
e if writing tables, not when this program is writing individual files.  See also feat

Standard options:
  --config                    : Configuration file to read (this option may be repeate
  --help                      : Print out usage message (bool, default = false)
  --print-args                : Print the command line arguments (to stderr) (bool, de
  --verbose                   : Verbose level (higher->more logging) (int, default = 0
```

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