tips for using OpenCV with Anaconda Python, Xcode

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OpenCV is sooo buggy... Everytime I came across opencv, I would spend a hell lot of time setting up the environment. Whether working with python, C++, Xcode.... OK now I finally got a chance to write some tips down, HOPE THIS WOULD HELP! *3*

Mac OS Yosemite 10.10.2 || Xcode 6.1.1 || opencv 2.4.10.1

Opencv can be got from

- cmake
- homebrew install opencv
- conda install opencv

I have the first 2 versions installed. (I deleted the conda version. But not sure how to completely romove the cmake version.)

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1. If you want to install opencv using homebrew:

homebrew requires linking numpy before installing opencv, but it can't link numpy because of some access error (Permission denied).

so...add access by the command "change owner"

sudo chown -R chenge /usr/local

```
172-16-208-183:1.9.1 Chenge$
172-16-208-183:1.9.1 Chenge$
172-16-208-183:1.9.1 Chenge$ brew install opencv
==> Installing opencv from homebrew/homebrew-science
Error: You must `brew link numpy' before opencv can be installed
172-16-208-183:1.9.1 Chenge$ brew link numpy
Linking /usr/local/Cellar/numpy/1.9.1... Error: Permission denied - /usr/local/l
ib/python2.7/site-packages/numpy
172-16-208-183:1.9.1 Chenge$ sudo chown -R chenge /usr/local/
Password:
172-16-208-183:1.9.1 Chenge$
172-16-208-183:1.9.1 Chenge$
172-16-208-183:1.9.1 Chenge$
172-16-208-183:1.9.1 Chenge$ brew link numpy
Linking /usr/local/Cellar/numpy/1.9.1... 391 symlinks created
172-16-208-183:1.9.1 Chenge$ ▊
```

Now you should be able to "brew link numpy", and then you can go ahead and "brew install opencv".

```
172-16-208-183:1.9.1 Chenge$ brew link numpy
Linking /usr/local/Cellar/numpy/1.9.1... 391 symlinks created
172-16-208-183:1.9.1 Chenge$ brew install opencv
==> Installing opencv from homebrew/homebrew-science
==> Downloading https://downloads.sf.net/project/machomebrew/Bottles/science/ope
################################################################### 100.0%
==> Pouring opencv-2.4.10.1.yosemite.bottle.tar.gz
Error: The `brew link` step did not complete successfully
The formula built, but is not symlinked into /usr/local
Could not symlink share/OpenCV/OpenCVConfig-version.cmake
Target /usr/local/share/OpenCV/OpenCVConfig-version.cmake
already exists. You may want to remove it:
  rm '/usr/local/share/OpenCV/OpenCVConfig-version.cmake'

To force the link and overwrite all conflicting files:
  brew link --overwrite opencv

To list all files that would be deleted:
  brew link --overwrite --dry-run opencv

Possible conflicting files are:
//。。。。a lot of files here//
==> Summary
🍺  /usr/local/Cellar/opencv/2.4.10.1: 219 files,  39M
172-16-208-183:1.9.1 Chenge$ rm /usr/local/share/OpenCV/OpenCVConfig-
version.cmake
172-16-208-183:1.9.1 Chenge$ brew link --overwrite opencv
Linking /usr/local/Cellar/opencv/2.4.10.1... 93 symlinks created
172-16-208-183:1.9.1 Chenge$ brew link --overwrite --dry-run opencv
Warning: Already linked: /usr/local/Cellar/opencv/2.4.10.1
To relink: brew unlink opencv && brew link opencv
172-16-208-183:1.9.1 Chenge$
```

**There are some comflicting files because I already had the cmake version opencv
installed. But I decided not to delete that and keep both.**

2. if you want to install opencv using Anaconda

conda install -c https://conda.binstar.org/jjhelmus opencv

```
172-16-208-183:site-packages Chenge$
172-16-208-183:site-packages Chenge$ conda install -c https://conda.binstar.org/
jjhelmus opencv
Fetching package metadata: ......
Solving package specifications: .............
Package plan for installation in environment /Users/Chenge/anaconda:

The following packages will be downloaded:

    package                    |            build
    ---------------------------|-----------------
    numpy-1.9.2                 |           py27_0         2.9 MB
    opencv-2.4.10               |        np19py27_0         8.4 MB
    setuptools-13.0.2           |           py27_0         436 KB
    pip-6.0.8                   |           py27_0         1.5 MB
    ------------------------------------------------------------
                                           Total:        13.2 MB

The following NEW packages will be INSTALLED:

    opencv:    2.4.10-np19py27_0

The following packages will be UPDATED:

    numpy:     1.8.2-py27_0  --> 1.9.2-py27_0
    pip:       1.5.6-py27_0  --> 6.0.8-py27_0
    setuptools: 5.8-py27_0   --> 13.0.2-py27_0

Proceed ([y]/n)? ▊
```

Anaconda Python works fine with the conda version opencv.But I uninstalled Anaconda opencv: conda uninstall opencv **, because I chose to** *link anaconda python with the brewed opencv instead***:**

- cd /Users/Chenge/anaconda/lib/python2.7/site-packages/
- ln -s /usr/local/Cellar/opencv/2.4.10.1/lib/python2.7/site-packages/cv.py cv.py
- ln -s /usr/local/Cellar/opencv/2.4.10.1/lib/python2.7/site-packages/cv2.so cv2.so

  `BTW, anoconda python path:` /Users/Chenge/anaconda/lib/python2.7/site-packages/
  there are packages like: */Users/Chenge/anaconda/lib/python2.7/site-packages/numpy*)

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3. Linking opencv with Xcode

choice 1: linking the brewed version:

- Under "Build Phases", "Link Binary With Libraries"
- Under "Build Settings", "Library Search Paths" (Set to /usr/local/Cellar/opencv/2.4.10.1/lib)
- Unser "Build Settings", "Header Search Paths" (Set to /usr/local/Cellar/opencv/2.4.10.1/include)
- Last but not least, **you should add whatever dylib files you need to the project** by *Add Files to...*

choice 2: linking the cmake version:

- Under "Build Phases", "Link Binary With Libraries"
- Under "Build Settings", "Library Search Paths" (Set to /usr/local/opt/opencv/lib)
- Unser "Build Settings", "Header Search Paths" (Set to /usr/local/opt/opencv/include/)
- Last but not least, **you should add whatever dylib files you need to the project** by *Add Files to...*

  `BTW, cmake version of opencv is at` : /usr/local/opt/opencv/include/opencv
  /usr/local/opt/opencv/include/opencv2
  /usr/local/opt/opencv/lib

If you don't know which version you should use, you can add them both...but this is not a neat idea.

This might be helpful: https://syncknowledge.wordpress.com/2014/11/02/using-opencv-2-4-9-with-xcode-6-1-on-os-x-yosemite/

Now you should be able to:

- run Anaconda python with Anaconda opencv or homebrewed opencv.
- use cmake version of opencv or homebrewed opencv in Xcode.
- have no idea what I have just jabbered, still stuck somewhere nowhere? **Well...good luck! Or should I say,** *google* **with luck~! :D**

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lichenge0223@gmail.com