Compile OpenCV 3.0.0 + OpenCV Contrib for Python on Raspberry Pi 2B

Step 1:

```
# update and upgrade before anything further
$ sudo apt-get update
$ sudo apt-get upgrade
$ sudo rpi-update (can be skipped, but recommended)
```

Step 2:

```
$ sudo apt-get install build-essential cmake pkg-config
```

Step 3:

```
$ sudo apt-get install libjpeg8-dev libtiff4-dev libjasper-dev libpng12-dev
```

Step 4:

```
$ sudo apt-get install libgtk2.0-dev
```

Step 5:

```
$ sudo apt-get install libavcodec-dev libavformat-dev libswscale-dev libv4l-
dev
```

Step 6:

```
$ sudo apt-get install libatlas-base-dev gfortran
$ sudo apt-get install python-numpy python-scipy python-matplotlib
$ sudo apt-get install default-jdk ant
$ sudo apt-get install libgtkglext1-dev
$ sudo apt-get install v4l-utils
```

Step 7:

```
# install pip

$ wget https://bootstrap.pypa.io/get-pip.py
$ sudo python get-pip.py
```

Step 8:

```
$ sudo apt-get install python2.7-dev
```

Step 9:

```
$ pip install numpy
```

Step 10:

```
# download OpenCV 3.0.0 and unpack it

$ cd ~
$ wget -O opencv.zip https://github.com/Itseez/opencv/archive/3.0.0.zip
$ unzip opencv.zip

# Contrib Libraries
```

```
$ wget -O opencv_contrib.zip
https://github.com/Itseez/opencv_contrib/archive/3.0.0.zip
$ unzip opencv_contrib.zip
```

Step 11:

```
# preparing the build

$ cd ~/opencv-3.0.0/
$ mkdir build
$ cd build
$ cmake -D CMAKE_BUILD_TYPE=RELEASE \
        -D CMAKE_INSTALL_PREFIX=/usr/local \
        -D INSTALL_C_EXAMPLES=ON \
        -D INSTALL_PYTHON_EXAMPLES=ON \
        -D OPENCV_EXTRA_MODULES_PATH=~/opencv_contrib-3.0.0/modules \
        -D BUILD_EXAMPLES=ON ..
```

Step 12:

```
# takes about 3.5 to 4 hours

$ make -j4 (I prefer -j3, because it doesn't use all the cores so it keeps
the RasPi cool enough)
```

Step 13:

```
# installing the build prepared in step 11

$ sudo make install
$ sudo ldconfig
```

Step 14:

```
$ sudo nano /etc/ld.so.conf.d/opencv.conf

# opencv.conf will be blank, add the following line, then save and exit nano:

/usr/local/lib          # enter this in opencv.conf, NOT at the command line
                       (leave a blank line at the end of opencv.conf)


# save opencv.conf by pressing ctrl+o
# get back again to the command line by pressing ctrl+x

$ sudo ldconfig

$ sudo nano /etc/bash.bashrc

# add the following lines at the bottom of bash.bashrc

PKG_CONFIG_PATH=$PKG_CONFIG_PATH:/usr/local/lib/pkgconfig
export PKG_CONFIG_PATH

# (leave a blank line at the end of bash.bashrc)
# save bash.bashrc changes (ctrl+o), then back at the command line (ctrl+x),
```

Step 15:

```
# Reboot
```

```
$ sudo shutdown -r now
```

Step 16 Last Step:

```
# verifying the installation

Open Python 2 IDLE on RasPi
# Type the following lines in the python shell:

>>> import cv2
>>> print cv2.__version__

# the following line should appear then:

'3.0.0'
```

Done