Parrot AR Drone 2.0 Project – OpenCV installation hints

To work with the drone we will use the free drone API PS-Drone. You can find the API and some documentation at http://www.playsheep.de/drone/. The API requires Python2.7 to work and for the videostream OpenCV is mandatory. Additonally, we want to detect markers in the videostream and therefore we use the Aruco library (https://www.uco.es/investiga/grupos/ava/node/26).
The Aruco library is contained in the OpenCV contribution packages, so the easiest way to obtain a working environment is to compile OpenCV directly with the contribution packages.

In short you need: Python2.7, OpenCV, Aruco Library

In the following I will demonstrate how you can obtain a working environment for a fresh Ubuntu install. This should also work, if you have other python interpreters installed, e.g. anaconda.

First, get the opencv and opencv_contrib repos from https://github.com/opencv either using git or simply by downloading from the homepage.

Extract the archives into a separate folder, e.g. ~/opencv.

Get your system up to date with:

$ *sudo apt-get update*
$ sudo apt-get upgrade

Install some essential libraries (you will probably have all of these already)

$ *sudo apt-get install build-essential cmake git pkg-config*

Install required libraries for OpenCV. You will probably not need all of these, but it's nice to have them.

$ sudo apt-get install libjpeg8-dev libtiff4-dev libjasper-dev libpng12-dev
$ sudo apt-get install libgtk2.0-dev
$ sudo apt-get install libavcodec-dev libavformat-dev libswscale-dev libv4l-dev
$ sudo apt-get install libatlas-base-dev gfortran
$ sudo apt-get install python2.7-dev

Change into the folder with the opencv package, make a build directory and change into that.

$ *cd ~/opencv*
$ mkdir build
$ cd build

Copy the setup.sh into the build folder and make it executable.

$ cp /wherever/you/saved/setup.sh ~/opencv/build
$ chmod +x setup.sh

Check if the paths for opencv and the extra modules are correct in the setup.sh file. If you followed this guide, they should be. Otherwise feel free to edit the file according to your preferences. Then run the script.

$ *./setup.sh*

Run the configured makefile where -j4 specifies the number of threads you want to use for compilation and install the libraries.

$ make -j4
$ sudo make install
$ sudo ldconfig

Check if installation was succesful:

$ python2.7
>>> import cv2
>>> cv2.__version__
>>>help(cv2.aroco) *gives you all the available functions and their parameters for python*