

Nvidia Jetson Nano

- [interesting projects](#)

query

jtop

```
sudo -H pip install -U jetson-stats
```

check CUDA

```
cd /usr/local/cuda-10.0/samples/1_Uutilities/deviceQuery
sudo make
./deviceQuery
```

```
cd /usr/local/cuda-10.0/samples/1_Uutilities/bandwidthTest/
sudo make
./bandwidthTest
```

```
Device 0: "NVIDIA Tegra X1"
  CUDA Driver Version / Runtime Version      10.0 / 10.0
  CUDA Capability Major/Minor version number: 5.3
  Total amount of global memory:            3957 MBytes (4148756480
bytes)
  ( 1) Multiprocessors, (128) CUDA Cores/MP: 128 CUDA Cores
  GPU Max Clock rate:                       922 MHz (0.92 GHz)
```

python 3.8

```
sudo apt install libssl-dev zlib1g-dev libncurses5-dev libncursesw5-dev
libreadline-dev libsqlite3-dev
sudo apt install libgdbm-dev libdb5.3-dev libbz2-dev libexpat1-dev liblzma-
dev libffi-dev uuid-dev
```

```
wget https://www.python.org/ftp/python/3.8.0/Python-3.8.0b3.tgz
tar zxvf Python-3.8.0b3.tgz
cd Python-3.8.0b3
CFLAGS=-DOPENSSL_NO_SSL2 ./configure --prefix=/opt/python3.8 \
    --enable-shared \
    --with-threads \
    --with-computed-gotos \
    --with-system-expat \
    --with-dbmliborder=gdbm:ndbm \
    --with-system-libmpdec \
```

```
--enable-loadable-sqlite-extensions  
make -j3  
sudo make install
```

opencv 4.1

- http://docs.donkeycar.com/guide/robot_sbc/setup_jetson_nano/
- <https://devtalk.nvidia.com/default/topic/1056594/jetson-nano-opencv-4-1-0/?offset=9>

```
apt remove -y libopencv libopencv-dev libopencv-python libopencv-samples  
apt install -y python3.7-dev python3.7-venv curl  
apt install -y libv4l-dev v4l-utils qv4l2 v4l2ucp  
apt install -y build-essential cmake git libgtk2.0-dev pkg-config  
libavcodec-dev libavformat-dev libswscale-dev  
apt install -y libgstreamer1.0-dev libgstreamer-plugins-base1.0-dev
```

python 3.7

```
curl https://bootstrap.pypa.io/get-pip.py -o get-pip.py  
python3.7 get-pip.py  
pip3.7 install -U wheel  
pip3.7 install -I numpy  
pip3.7 install Cython
```

add swap to compile opencv

```
fallocate -l 6G /mnt/6GB.swap  
mkswap /mnt/6GB.swap  
swapon /mnt/6GB.swap  
swapon -s
```

```
RELEASE=4.1.1  
cd ~/  
curl -L https://github.com/opencv/opencv/archive/${RELEASE}.zip -o opencv-  
${RELEASE}.zip  
curl -L https://github.com/opencv/opencv_contrib/archive/${RELEASE}.zip -o  
opencv_contrib-${RELEASE}.zip  
unzip opencv-${RELEASE}.zip  
unzip opencv_contrib-${RELEASE}.zip  
cd opencv-${RELEASE}/  
mkdir release  
cd release/  
cmake -D WITH_CUDA=ON -D CUDA_ARCH_BIN="5.3" -D CUDA_ARCH_PTX="" -D  
OPENCV_EXTRA_MODULES_PATH=../../opencv_contrib-${RELEASE}/modules -D  
WITH_GSTREAMER=ON -D WITH_LIBV4L=ON -D BUILD_opencv_python2=OFF -D  
BUILD_opencv_python3=ON -D BUILD_TESTS=OFF -D BUILD_PERF_TESTS=OFF -D  
BUILD_EXAMPLES=OFF -D CMAKE_BUILD_TYPE=RELEASE -D  
CMAKE_INSTALL_PREFIX=/usr/local -D PYTHON_EXECUTABLE=/usr/bin/python3.7 -D  
PYTHON_DEFAULT_EXECUTABLE=/usr/bin/python3.7 -D BUILD_DOCS=OFF -
```

```
DENABLE_PRECOMPILED_HEADERS=OFF ..  
make -j3
```

install

```
sudo make install/strip  
sudo ldconfig
```

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```
cp /usr/local/lib/python3.7/site-packages/cv2/python-3.7/cv2.cpython-37m-  
aarch64-linux-gnu.so lib/lib/python3.7/site-packages/
```

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<https://wiki.csgalileo.org/> - **Galileo Labs**

Permanent link:

<https://wiki.csgalileo.org/projects/internetofthings/jetsonnano?rev=1564592748>

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