Jetson Nano experience

OpenCv + Gstreamer

```
cmake -D CMAKE_BUILD_TYPE=RELEASE \
-D CMAKE_INSTALL_PREFIX=/usr/local \
-D OPENCV_GENERATE_PKGCONFIG=ON \
-D BUILD_EXAMPLES=OFF \
-D INSTALL_PYTHON_EXAMPLES=OFF \
-D INSTALL_C_EXAMPLES=OFF \
-D PYTHON_EXECUTABLE=$(which python2) \
-D BUILD_opencv_python2=OFF \
-D PYTHON3_EXECUTABLE=$(which python3) \
-D PYTHON3_INCLUDE_DIR=$(python3 -c "from distutils.sysconfig import
get_python_inc; print(get_python_inc())") \
-D PYTHON3_PACKAGES_PATH=$(python3 -c "from distutils.sysconfig import
get_python_lib; print(get_python_lib())") \
-D OPENCV_EXTRA_MODULES_PATH=../../opencv_contrib/modules/ \
-D WITH_GSTREAMER=ON \
..
```

https://developer.ridgerun.com/wiki/index.php?title=Compiling_OpenCV_from_Source

CNN Face detection

Dlib, face recognition model (2gb RAM like limit):

- CPU 0.4
- GPU 3.1 (after 30s first frame + SWAP migration)

Not Fast in real:

- https://medium.com/@ageitgey/build-a-face-recognition-system-for-60-with-the-new-nvidia-jetson-nano-2gb-and-python-46edbddd7264

Fast:

- https://towardsdatascience.com/face-recognition-using-tensorrt-on-jetson-nano-set-up-in-less-than-5min-7c00bf730085
- https://forums.developer.nvidia.com/t/fastest-face-detector-on-jetson-nano/196671/3

Запуск моделей на NVidia, в частности FaceDetect FaceDetect — лучше чем FaceirNet model, на RGB изображениях и маленьких лицах

based on NVIDIA DetectNet_v2 detector with ResNet18 as a feature extractor

Train Adapt Optimize (TAO) Toolkit is a python based AI toolkit for taking purpose-built pre-trained AI

models and customizing them with your own data. TAO adapts popular network architectures and backbones to your data, allowing you to train, fine tune, prune and export highly optimized and accurate AI models for edge deployment.

736x416x3 dimension input tensors — 16 FPS на Nano

This model needs to be used with NVIDIA Hardware and Software. For Hardware, the model can run on any NVIDIA GPU including NVIDIA Jetson devices. This model can only be used with Train Adapt Optimize (TAO) Toolkit, DeepStream 6.0 or TensorRT

DeepStream: Nano removed from page 1 June

- https://developer.nvidia.com/tensorrt
- https://developer.nvidia.com/embedded/develop/software