**********Draft**********

TensorFlow for Raspberry Pi 4 64 bit and Raspberry Pi Pico
TensorFlow Lite
image_classification
10/21/22

**********Draft**********

Installed Tensorflow 2.9 on a 64 bit Raspberry Pi 4 4Gb.
10/3/2022
Installed Tensorflow 2.8 on a 64 bit Raspberry Pi 4 4Gb.
10/21/2022

video link https://youtu.be/QLZWQlg-Pk0

How to Install Tensorflow 2 on a Raspberry Pi

https://www.samwestby.com/tutorials/rpi-tensorflow.html

Sam Westby

```
 hostname
-pi4-28
-
+raspberrypi

dphys-swapfile
-CONF_SWAPSIZE=1000
+CONF_SWAPSIZE=100

uname -m
aarch64
extra_pkgs_64bit.sh
extra_1.sh
extra_2.sh
extra_3.sh
   2207   22635  308292 pkgs-a.txt
   2239   22978  312904 pkgs-b.txt
   2246   23050  313924 pkgs-c.txt
   1418   14331  184451 pkgs.txt
ssh-keygen -t rsa
ssh-copyid pi4-27

cp .octaverc pi4-28:~/
 ls *.img
installed-openocd082722-228ede-64bit.img  qemu-6.2.0-rpios-64bit.img
openocd082722-228ede-64bit.img            ultibo2.5.123-082722-64bit.img

sudo unsquashfs -d ultibo  ultibo2.5.123-082722-64bit.img
```

scp .local/share/applications/ultibo.desktop pi4-28:~/.local/share/applications/

git clone git@github.com:develone/Ultibo_Projects.git

devel@pi4-28:~/Ultibo_Projects/jpeg2000/src $ ./compile_ultibo.sh

cd ../QEMU/

./libbuild.sh

sudo unsquashfs -d qemu-6.2.0-rpios qemu-6.2.0-rpios-64bit.img

. Ultibo_Projects/picoultibo.sh

first compile jpeg2000 QEMU with Lazarus IDE (Ultibo Edition)
./startqemu.sh

sudo unsquashfs installed-openocd082722-228ede-64bit.img

cp -R squashfs-root/* local/openocd/

which openocd
/home/devel/local/openocd/bin/openocd

Very important for setting a virtual env
curl https://pyenv.run | bash

mkdir test-1-2.9

cd test-1-2.9/

cp ~/xx/my-projects-docs/Pi/download_tensorflow-2.9.0-cp39-none-linux_aarch64.sh ~/test-1-2.9/

./download_tensorflow-2.9.0-cp39-none-linux_aarch64.sh

python3 -m venv env

source env/bin/activate

pip3 install -U wheel tensorflow-2.9.0-cp39-none-linux_aarch64.whl

python3
Python 3.9.2 (default, Feb 28 2021, 17:03:44)
[GCC 10.2.1 20210110] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> import tensorflow
>>> tensorflow.__version__
'2.9.0'
>>> quit()
pip3 install ipython

```
mkdir test-1-2.8
cd test-1-2.8/
python3 -m venv env

source env/bin/activate

pip3 install -U wheel tensorflow-2.8.0-cp39-none-linux_aarch64.whl

pip3 install protobuf==3.20.*
pip3 install ipython
pip3 install nbformat
pip3 install pandas
pip3 install matplotlib
pip3 install -U wheel six
pip3 install -U wheel mock
python3
Python 3.9.2 (default, Feb 28 2021, 17:03:44)
[GCC 10.2.1 20210110] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> import tensorflow as tf
>>> print(tf.__version__)
2.8.0
```