**(First version/edition)**

**INSTRUCTION**

**To setup/install**

**Anconda and running CUDA/PyTorch**

**Jetson Nano**

**Goals:**

* **To have access and run CUDA codes directly on Jetson Nano with no need to use Co-lab/Kaggle**
* **To complete assignment # 3 using Jetson Nano**

**Requirements:**

* **Jetson Nano**
* **SD card with minimum 126 GB storage**
* **Have already configured and activated the container from assignment # 2 Jetson Nano using following link:**
  + To use for the project [NVIDIA-AI-IOT/jetbot: An educational AI robot based on NVIDIA Jetson Nano. (github.com)](https://github.com/NVIDIA-AI-IOT/jetbot)
  + Used for Assignment # 2 [jetson-inference/aux-docker.md at master · dusty-nv/jetson-inference (github.com)](https://github.com/dusty-nv/jetson-inference/blob/master/docs/aux-docker.md)
  + By now you a must use about 20 GB of the SD card (%25 of storage)
* Make sure Jetson Nano connected to wifi
* Run Jupyter-lab using “IP address:8888”

**Process:**

* Transfer Learning with Pytorch
  + So, following [jetson-inference/pytorch-transfer-learning.md at master · dusty-nv/jetson-inference (github.com)](https://github.com/dusty-nv/jetson-inference/blob/master/docs/pytorch-transfer-learning.md) , to install PyTorch
* After installing PyTorch:
  + Create a new “.ipynp” file in the Jupyter-lab
  + Import following libraries and run the cell to make sure all needed libraries will be imported with no error
    - import os
    - Import sys
    - Import numpy
    - Import pytorch
    - Import torchvision
    - Import cv2
    - Import traitlets
    - Import display
    - Import ipywidgets
    - Import time
    - Import timeit
    - Import PIL.Image
    - Import argparse
    - Import matplotlib.pyplot
* If there is any error, need to update/upgrade:
  + Update Linux system
  + Upgrade Linux system
  + Upgrade pip/pip3/matploilib,…
* You may need to run and update/upgrade several items using below links:
  + Install anaconda on Jetson Nano,
    - <https://cyb.tw/docs/Tech/2020/9/18_Install-anaconda-on-Jetson-Nano.html#install-archiconda>
  + Python Virtual Environments in Linux
    - <https://latisresearch.umn.edu/python-virtual-environments-in-linux>
  + jetson\_stats
    - <https://github.com/rbonghi/jetson_stats/wiki/jtop>
  + jtop
    - <https://github.com/rbonghi/jetson_stats>
  + How to setup Python3 and Jupyter Notebook On Jetson Nano – Faster
    - [How to setup Python3 and Jupyter Notebook On Jetson Nano – Faster – Random Access Memories (sahilramani.com)](https://sahilramani.com/2021/11/how-to-setup-python3-and-jupyter-notebook-on-jetson-nano-faster/)
  + Keep Update Ubuntu in the Terminal/pip/pip3/python/python3
    - [How to Update Ubuntu Linux (howtogeek.com)](https://www.howtogeek.com/740795/how-to-update-ubuntu-linux/)
    - [How to Upgrade PIP Package to Latest Version [Update PIP] (monovm.com)](https://monovm.com/blog/how-to-upgrade-pip-package/)
    - [How to Update/Upgrade Python in Linux [Ubuntu/RedHat] (linuxscrew.com)](https://www.linuxscrew.com/update-upgrade-python-linux)
    - [How to Install NumPy](https://phoenixnap.com/kb/install-numpy#:~:text=Installing%20NumPy%201%20Step%201%3A%20Check%20Python%20Version,5%20Step%205%3A%20Import%20the%20NumPy%20Package%20)