

PyTorch routine

For a total beginner to PyTorch, visit this [website](#)

0. Setting up on Colab

Without a GPU, I always need to rely on Google Colab to train my model. A Colab instance is always come prepared with torch, but in case it does not, you need to set up with `pip`. I often install other modules to help with the post-training process. You need to pay Google for a CLI, but you could also make do with the code cell!

```
In [ ]: !pip install torch torchmetrics mlxtend
```

```
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/
Requirement already satisfied: torch in /usr/local/lib/python3.8/dist-packages (1.13.0+cu116)
Collecting torchmetrics
  Downloading torchmetrics-0.11.0-py3-none-any.whl (512 kB)
    |████████████████████████████████████████| 512 kB 4.5 MB/s
Requirement already satisfied: mlxtend in /usr/local/lib/python3.8/dist-packages (0.14.0)
Requirement already satisfied: typing-extensions in /usr/local/lib/python3.8/dist-packages (from torch) (4.4.0)
Requirement already satisfied: packaging in /usr/local/lib/python3.8/dist-packages (from torchmetrics) (21.3)
Requirement already satisfied: numpy>=1.17.2 in /usr/local/lib/python3.8/dist-packages (from torchmetrics) (1.21.6)
Requirement already satisfied: setuptools in /usr/local/lib/python3.8/dist-packages (from mlxtend) (57.4.0)
Requirement already satisfied: pandas>=0.17.1 in /usr/local/lib/python3.8/dist-packages (from mlxtend) (1.3.5)
Requirement already satisfied: scikit-learn>=0.18 in /usr/local/lib/python3.8/dist-packages (from mlxtend) (1.0.2)
Requirement already satisfied: matplotlib>=1.5.1 in /usr/local/lib/python3.8/dist-packages (from mlxtend) (3.2.2)
Requirement already satisfied: scipy>=0.17 in /usr/local/lib/python3.8/dist-packages (from mlxtend) (1.7.3)
Requirement already satisfied: pyparsing!=2.0.4,!=2.1.2,!=2.1.6,>=2.0.1 in /usr/local/lib/python3.8/dist-packages (from matplotlib>=1.5.1->mlxtend) (3.0.9)
Requirement already satisfied: python-dateutil>=2.1 in /usr/local/lib/python3.8/dist-packages (from matplotlib>=1.5.1->mlxtend) (2.8.2)
Requirement already satisfied: cycler>=0.10 in /usr/local/lib/python3.8/dist-packages (from matplotlib>=1.5.1->mlxtend) (0.11.0)
Requirement already satisfied: kiwisolver>=1.0.1 in /usr/local/lib/python3.8/dist-packages (from matplotlib>=1.5.1->mlxtend) (1.4.4)
Requirement already satisfied: pytz>=2017.3 in /usr/local/lib/python3.8/dist-packages (from pandas>=0.17.1->mlxtend) (2022.6)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.8/dist-packages (from python-dateutil>=2.1->matplotlib>=1.5.1->mlxtend) (1.15.0)
Requirement already satisfied: joblib>=0.11 in /usr/local/lib/python3.8/dist-packages (from scikit-learn>=0.18->mlxtend) (1.2.0)
Requirement already satisfied: threadpoolctl>=2.0.0 in /usr/local/lib/python3.8/dist-packages (from scikit-learn>=0.18->mlxtend) (3.1.0)
Installing collected packages: torchmetrics
Successfully installed torchmetrics-0.11.0
```

```
In [ ]: !pip install --upgrade mlxtend
```

```

Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/
Requirement already satisfied: mlxtend in /usr/local/lib/python3.8/dist-packages (0.14.0)
Collecting mlxtend
  Downloading mlxtend-0.21.0-py2.py3-none-any.whl (1.3 MB)
    |████████████████████████████████████████| 1.3 MB 4.9 MB/s
Requirement already satisfied: scikit-learn>=1.0.2 in /usr/local/lib/python3.8/dist-packages (from mlxtend) (1.0.2)
Requirement already satisfied: matplotlib>=3.0.0 in /usr/local/lib/python3.8/dist-packages (from mlxtend) (3.2.2)
Requirement already satisfied: setuptools in /usr/local/lib/python3.8/dist-packages (from mlxtend) (57.4.0)
Requirement already satisfied: scipy>=1.2.1 in /usr/local/lib/python3.8/dist-packages (from mlxtend) (1.7.3)
Requirement already satisfied: numpy>=1.16.2 in /usr/local/lib/python3.8/dist-packages (from mlxtend) (1.21.6)
Requirement already satisfied: joblib>=0.13.2 in /usr/local/lib/python3.8/dist-packages (from mlxtend) (1.2.0)
Requirement already satisfied: pandas>=0.24.2 in /usr/local/lib/python3.8/dist-packages (from mlxtend) (1.3.5)
Requirement already satisfied: pyparsing!=2.0.4,!=2.1.2,!=2.1.6,>=2.0.1 in /usr/local/lib/python3.8/dist-packages (from matplotlib>=3.0.0->mlxtend) (3.0.9)
Requirement already satisfied: kiwisolver>=1.0.1 in /usr/local/lib/python3.8/dist-packages (from matplotlib>=3.0.0->mlxtend) (1.4.4)
Requirement already satisfied: cycler>=0.10 in /usr/local/lib/python3.8/dist-packages (from matplotlib>=3.0.0->mlxtend) (0.11.0)
Requirement already satisfied: python-dateutil>=2.1 in /usr/local/lib/python3.8/dist-packages (from matplotlib>=3.0.0->mlxtend) (2.8.2)
Requirement already satisfied: pytz>=2017.3 in /usr/local/lib/python3.8/dist-packages (from pandas>=0.24.2->mlxtend) (2022.6)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.8/dist-packages (from python-dateutil>=2.1->matplotlib>=3.0.0->mlxtend) (1.15.0)
Requirement already satisfied: threadpoolctl>=2.0.0 in /usr/local/lib/python3.8/dist-packages (from scikit-learn>=1.0.2->mlxtend) (3.1.0)
Installing collected packages: mlxtend
  Attempting uninstall: mlxtend
    Found existing installation: mlxtend 0.14.0
    Uninstalling mlxtend-0.14.0:
      Successfully uninstalled mlxtend-0.14.0
Successfully installed mlxtend-0.21.0

```

```
In [ ]: # Any other of your choice!
```

1. Import modules