CML & Federated Learning

<https://github.com/adap/flower/tree/main/examples/flower-simulation-step-by-step-pytorch>

Federated Learning – Flower: pip install flwr==1.4.0

SETUP CONDA ENVIROMENT:

# I'm assuming you are running this on an Ubuntu 22.04 machine (GPU is not required)

# create the environment

conda create -n flower\_tutorial python=3.9 -y

# activate your environment (depending on how you installed conda you might need to use `conda activate ...` instead)

source activate flower\_tutorial

# install PyToch (other versions would likely work)

conda install pytorch==1.13.1 torchvision==0.14.1 torchaudio==0.13.1 pytorch-cuda=11.6 -c pytorch -c nvidia -y

# conda install pytorch==1.13.1 torchvision==0.14.1 torchaudio==0.13.1 -c pytorch -y # If you don't have a GPU

# Install Flower and other dependencies

pip install -r requirements.txt

# with conda environment activated

Ray: pip install ray==1.11.1

PyTorch: conda install pytorch==1.13.1 torchvision==0.14.1 torchaudio==0.13.1 -c pytorch -y

Hydra-Core: pip install hydra-core

Requirements: pip install -r requirements.txt

MACOS Silicon chip:

# with conda environment activated

pip uninstall grpcio

conda install grpcio -y

DATASET PREP:

dataset.py

FLOWER CLIENT AND MODEL

model.py

client.py

STRATEGY AND SERVER:

server.py

START SIMULATION: