Face Recognition Model Training

NVIDIA Professional Services & Quantiphi

1. Environment Setup

- mkdir frs-demo
- cd frs-demo
- enroot –help
- enroot import docker://quantiphinvidiapractice/aditya-pytorch-mini
- enroot list

2. FR Model Training Commands

2.1 Download & Unzip Files:

- wget https://storage.googleapis.com/launchpad-riva-asr-retraining-datasets/files.zip
- unzip files.zip

2.2 Create a shell script to run Training:

job.sh content

```
#!/bin/bash

#SBATCH --job-name=frs-demo
#SBATCH --nodes=1
#SBATCH --partition=dgxnp
#SBATCH --ntasks=1
#SBATCH --gres=gpu:A100-SXM4:8
#SBATCH --cpus-per-task=4

srun --no-container-entrypoint --container-workdir /workspace/face.evoLVe/
--container-image  $(pwd)/quantiphinvidiapractice+aditya-pytorch-mini.sqsh
--container-mounts $(pwd):/workspace/ \
python3 train.py
```

2.3 Run the Shell Script:

sbatch job.sh

An ID gets scheduled i.e. 12345

2.4 Check the Output of the Training:

nano 12345.out

2.5 Reference:

https://github.com/ZhaoJ9014/face.evoLVe

https://hub.docker.com/r/quantiphinvidiapractice/aditya-pytorch-mini/

3. FRS DeepStream Demo Instructions

3.1 Prerequisites:

- CUDA 11+ with NVIDIA Driver
- Docker with sudo docker permissions for the user

3.2 Steps to Run the Demo

- docker pull mkumaravel07/cdac_frs:latest
- docker run --name frs --gpus all -itd --net=host --privileged -w /root/cdac_frs mkumaravel07/cdac_frs:[TAG]
- Attach the container on a code editor (VS Code is used in the session, to use the same install Remote Explorer Extension)
- Open /root/cdac_frs folder
- **Adding Reference of a person**
    - Record a short clip (10 seconds) of a single person slightly moving the head from left to right and up to down. Copy and paste the videos under /root/cdac_frs/streams folder
    - Open cfg.yaml
        - change the stream name to file:///root/cdac_frs/streams/[video_name]
        - Change the name to the name of the person in the video

        - Change add_ref to True
    - Run python3 run_pipeline.py

- **Run the demo**
    - Record a video of a multiple person, copy and paste the videos under /root/cdac_frs/streams folder
    - Open cfg.yaml
        - change the stream name to file:///root/cdac_frs/streams/[video_name]
        - Change add_ref to False
    - Run python3 run_pipeline.py
    - The output will be saved under /root/cdac_frs as op.mp4 where you will see the boxes on the face with the person's name if recognized or NR when not recognized