Dynamic Recognition: Extending Faster RCNN Capabilities for Facial Identification in Media Stream

Installation

Use the package manager pip to install foobar.

```
pip install -r requirements.txt
```

Please note that because we are utilizing GPU for Training so you need to configure your device with CUDA Computing Tool Kit and supproted cuDNN libraries. Also You need to install Opencv-python with CUDA support!

You need a CUDA support device to be able to run the code.
Please follow

Usage

```
# dataset side
# To modify the movie from 30FPS to 1 FPS for better sample collecting
python .\movie_modify.py -video PATH_OF_VIDEO --output PATH_OF_VIDEO_OUTPUT

# To save the face clip and corresponding bounding box coordinates.
python .\videro_test_V2.py -video PATH_OF_MODIFIED_VIDEO --output
PATH_OF_FOLD_TO_SAVE

# data set was splited and classified manually and put in to form like
_actors  (contains all face clips after manually classified)
___Courteney Cox
___David Schwimmer
...

and

_DATA
__TRAINVAL
___Courteney Cox
___David Schwimmer
...
__TEST
___Courteney Cox
___David Schwimmer
```

```
...

# code to generate the XML file for annotation( but you need to change the base
directory 'D:\\DSFD-Pytorch-Inference-1\\data\\actors' to "_actors directory"
python .\make_XML.py

# code to generate the Layour and Main text files for each person. (replace
output_directory and base_directory as needed)
python .\generate_Layout.py
python .\generate_Main.py

# model side
# To Train the model, it will perform full training process.
python -m pytorch.FasterRCNN --train --dataset-dir=PATH_TO_DATA_SET --
backbone=BACK_BONE --epochs=NUM_EPOCH --learning-rate=LEARNING_RATE --save-
best-to=PAHT_TO_SAVE_MODEL

# To see the result from a single image:
python -m pytorch.FasterRCNN --backbone=BACKBONE--load-from=PATH_OF_THE_MODEL -
-predict=PATH_OF_IMAGE

# To run the model and get a visual result from the movie
python .\generate_labeled_movie.py --output PATH_OF_OUTPUT_FILE_NAME  --predict
PATHO_OF_MOIVE --load-from= PATH_OF_THE_MODEL
```

IF you can not run the script you can watch the sample output we have.

Limitation

The performance currently is limited to the video contents that are generated from 'Firends'.