BiQPS

- This is an open software, called BiQPS, for bitstream-based quality prediction in adaptive video streaming. BiQPS is inputed by .csv files containing data of streaming sessions. In particular, each line of a file is a record of each segment in a session. Each record consists of five parameters separated by commas, namely stalling duration SD, quantization parameter QP, bitrate BR, resolution RS, and frame-rate FR. The predicted overall quality values of the sessions are saved in a .txt output file.

Installation

BiQPS was tested with 1) Ubuntu 16.04 LTS, python 3.5, pip 19.2.3, and tensorflow 1.13.1 and 2) Ubuntu 18.04.3 LTS, python 3.6, pip 9.0.1, and tensorflow 1.11.0.

- Download and install pip3 and python3

```
sudo apt update
sudo apt install python3-dev python3-pip
```

- Download and install Tensorflow from https://www.tensorflow.org/install/pip
- Clone the BiQPS repository

```
git clone https://github.com/TranHuyen1191/BiQPS.git
```

- Install BiQPS

```
pip3 install --user .
```

✧ Note: You can uninstall BiQPS software with `pip3 uninstall biQPS`

Usage

```
biQPS [-h] [-i I [I ...]] [--K K] [--lcMode {SQM}] [--gcMode {1,2,3}] [-o O]
optional arguments:
  -h, --help        show this help message and exit
  -i I [I ...]      .csv input files
```

```
  --K K               interval length (default: 20); only valid for gcMode=1 and
gcMode=2
  --lcMode {SQM}    local computation mode (default:'SQM')
  --gcMode {1,2,3}  global computation mode (default:3)
  -o O             .txt output file
```

Example

The predicted ovarall quality value of a session can be obtained by the following command.

```
  biQPS -i inputData.csv
```

The output is saved in output.txt

```
  inputFiles     predictedValues
  inputData.csv  1.783356
```