VHH Plugin Package: Camera Movements Classification (vhh_cmc)

Release 1.2.2

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CONTENTS

The following description gives an overview of the folder structure of this python repository:

name of repository: vhh_cmc

- **ApiSphinxDocumentation/**: includes all files to generate the documentation as well as the created documentations (html, pdf)
- **config/**: this folder includes the required configuration file
- **cmc/**: this folder represents the shot-type-classification module and builds the main part of this repository
- **Demo/**: this folder includes a demo script to demonstrate how the package have to be used in customized applications
- **Develop/: includes scripts to generate the sphinx documentation. Furthermore, a script is included to run a** process to evaluate the implemented approach on a specified dataset.
- **README.md**: this file gives a brief description of this repository (e.g. link to this documentation)
- **requirements.txt**: this file holds all python lib dependencies and is needed to install the package in your own virtual environment
- **setup.py**: this script is needed to install the cmc package in your own virtual environment

CHAPTER

ONE

SETUP INSTRUCTIONS

This package includes a setup.py script and a requirements.txt file which are needed to install this package for custom applications. The following instructions have to be done to use this library in your own application:

Requirements:

- Ubuntu 18.04 LTS
- python version 3.6.x

Create a virtual environment:

- create a folder to a specified path (e.g. /xxx/vhh_cmc/)
- python3 -m venv /xxx/vhh_cmc/

Activate the environment:

- source /xxx/vhh_cmc/bin/activate

Checkout vhh_cmc repository to a specified folder:

- git clone https://github.com/dahe-cvl/vhh_cmc

Install the cmc package and all dependencies:

- change to the root directory of the repository (includes setup.py)
- python setup.py install

Setup environment variables:

- source /data/dhelm/python_virtenv/vhh_sbd_env/bin/activate
- export CUDA_VISIBLE_DEVICES=1
- export PYTHONPATH=$PYTHONPATH:/XXX/vhh_cmc/:/XXX/vhh_cmc/Develop/:/XXX/vhh_cmc/Demo/

Note: You can check the success of the installation by using the commend *pip list*. This command should give you a list with all installed python packages and it should include *vhh_cmc*.

Run demo script

- change to root directory of the repository
- python Demo/vhh_cmc_run_on_single_video.py

CHAPTER

TWO

PARAMETER DESCRIPTION

DEBUG_FLAG This parameter is used to activate or deactivate the debug mode.

SBD_RESULTS_PATH This parameter is used to specify a SBD results file for debugging mode.

PATH_DEBUG_RESULTS This parameter is used to specify the results path in debug mode

SAVE_DEBUG_PKG This parameter is used to save a debug package (e.g. including some visualizations, ... - not available yet).

CONVERT2GRAY_FLAG This flag is used to convert a input frame into a grayscale frame (0... deactivate, 1 ... activate).

CENTER_CROP_FLAG This flag is used to center crop a input frame (0... deactivate, 1 ... activate).

DOWNSCALE_FLAG This flag is used to scale a input frame into the specified dimension (0... deactivate, 1 ... activate).

RESIZE_DIM This flag is used to to specify the resize dimension. (only usable if DOWNSCALE_FLAG is active).

MVI_MV_RATIO This parameter is used to specify the ratio between available motion-vectors-of-interest to the all motion-vectors.

THRESHOLD_SIGNIFICANCE This parameter is used to specify the threshold (t1) for the significance check.

THRESHOLD_CONSISTENCY This parameter is used to specify the threshold (t2) for the consistency check.

MVI_WINDOW_SIZE This parameter is used to specify the temporal window_size (k) for the significance/consistency check.

REGION_WINDOW_SIZE This parameter is used to specify the temporal window_size (n) for the final movements classification over one shot.

ACTIVE_THRESHOLD This parameter is used to specify the percentage threshold to identify movement activities.

CLASS_NAMES This parameter is used to specify the class names.

SAVE_RAW_RESULTS This parameter is used to save raw results (e.g. debug visualizations).

PATH_RAW_RESULTS This parameter is used to specify the path for saving the raw results.

PREFIX_RAW_RESULTS This parameter is used to specify the prefix for the results file.

POSTFIX_RAW_RESULTS This parameter is used to specify the postfix for the results file.

SAVE_FINAL_RESULTS This parameter is used to save final results (e.g. csv list).

PATH_FINAL_RESULTS This parameter is used to specify the path for saving the final results.

PREFIX_FINAL_RESULTS This parameter is used to specify the prefix for the results file.

POSTFIX_FINAL_RESULTS This parameter is used to specify the postfix for the results file.

PATH_VIDEOS This parameter is used to specify the path to the videos.

SAVE_EVAL_RESULTS This parameter is used to save evaluation results (e.g. visualizations, . . .).

PATH_RAW_RESULTS This parameter is used the raw results path.

PATH_EVAL_RESULTS This parameter is used to specify the path to store the evaluation results path.

PATH_GT_ANNOTATIONS This parameter is used to groundtruth annotations used for evaluation.

PATH_EVAL_DATASET This parameter is used to specify the path to the dataset used for the evaluation.

CHAPTER

THREE

API DESCRIPTION

This section gives an overview of all classes and modules in *cmc* as well as an code description.

3.1 Configuration class

3.2 CMC class

3.3 OpticalFlow class

3.4 PreProcessing class

3.5 Evaluation class

CHAPTER

FOUR

INDICES AND TABLES

- genindex
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4.1 References