Computer Vision : Assignment 0

Meher Shashwat Nigam
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Assignment drive link for videos and images: Link

Task : Chroma Keying with OpenCV

1. Video ↔ Images

Defined a function getFrames which takes the video file path and sampling frame rate as the argument and stores the frames sampled from the video into an output folder.

- Used *cv2.VideoCapture()* to read the video frame by frame.
- *vidcap.set(cv2.CAP_PROP_POS_MSEC,i*1000)* to set the frame extraction point to the i'th second.

Output has been provided on *video.mp4* at framerate=0.25 in folder *op*.

Defined a function makeVideo which takes the input frames folder path,the output video file path and sampling frame rate as arguments and combines the frame to make a video at the specified frame rate.
Used out = cv2.VideoWriter(pathOut,cv2.VideoWriter_fourcc(*'DIVX'), fps, size) for making the video from a sorted array of frames.
Output has been provided on the frames captured above at 12 fps (*opvideo.mp4*).

2.Capturing Images

Used webcam to capture frames. Wrote function getWebcamFrames that captures n frames from the webcam and stores it in the folder *webop*.
The function takes number of frames(n) as argument.
vidcap = cv2.VideoCapture(0)
Setting the argument to zero puts the default/integrated camera of the device to use.
/dev/video0 is the primary camera location, the user should be added its permission group.

3. Chroma Keying

Wrote a function *chromaKeyFrames* that takes two folders with frames(foreground and background video frames) , along with the threshold range to be used for foreground image, output video fps and path as input. Outputs a combined video. Output example : chromavideo.mp4.