

Assisted Video Colorization Using Texture Descriptors

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Abstract : Colorization is the process of add colors to a monochromatic image or video. Usually, the process involves to segment the image in regions of interest and then apply colors to each one, for videos, this process is repeated for each frame, which makes it a tedious and time-consuming job. We propose a new assisted method for video colorization; the user only has to colorize one frame, and then the colors are propagated to following frames. The user can intervene at any time to correct eventual errors in color assignment. The method consists of to extract intensity and texture descriptors from the frames and then perform a feature matching to determine the best color for each segment. To reduce computation time and give a better spatial coherence we narrow the area of search and give weights for each feature to emphasize texture descriptors. To give a more natural result, we use an optimization algorithm to make the color propagation. Experimental results in several image sequences, compared to others existing methods, demonstrates that the proposed method perform a better colorization with less time and user interference.

Keywords : colorization, feature matching, texture descriptors, video segmentation

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