

SIMULTANEOUS DEBLUR AND SUPER-RESOLUTION TECHNIQUE FOR VIDEO SEQUENCE CAPTURED BY HAND-HELD VIDEO CAMERA

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Abstract

Nowadays, video camera is commonly used everywhere and demand of retrieving a single shot from video sequence is increasing[1][2][3]. Since resolution of video camera is usually lower than that of digital camera, simply cutting out a frame from a video sequence ends up with low quality. Further, because of the necessity of high fps on video camera, video data inevitably contains motion blur and it leads mis-registration between frames which is critical for multi-frame super-resolution. In this paper, we propose a method to restore high-resolution image from a video sequence considering motion blur. Since the frame-rate of a video camera is high, motion of the object in successive frames is small, and thus, stable feature tracking during short sequences is possible even if there is a blur.[4][5] Thus, we adopt a division/integration approach to realize robust tracking for long sequence. We also propose a simultaneous deblur and super-resolution technique using multiple images based on MAP estimation.

Experimental results are shown to prove the strength of our method. (Figure.1)

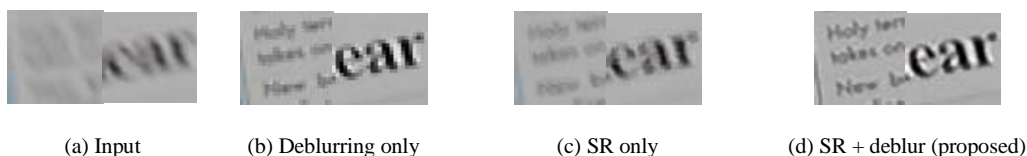


Figure 1. Real scene experimental results.

References

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