Spatial-Temporal Consistency Based Adaptive Hand-held Video Stabilization

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(No sound)
• Method

• The pipeline of our framework

(a) Feature extraction, matching and saliency map construction
(b) Salient regions preserving based spatial structure consistency optimization
(c) Self-adaptive IMFs
(d) Feature-centric EMD
• Method

• Saliency Preserving Based Spatial Structure Consistency Warping

SIFT Based Spatial Structure Homography Construction

shaking video

feature extraction

Spatial Structure Homography

feature matching

geometric transformation algorithm
• Method
  • Saliency Preserving Based Spatial Structure Consistency Warping

Spatial Structure Consistency Optimization
• Method

• Self-Adaptive IMFs Based Temporal, Feature-centric EMD Optimization

Self-Adaptive IMFs
• Method
• Self-Adaptive IMFs Based Temporal, Feature-centric EMD Optimization

Feature-Centric EMD

(a) The public square with and without the feature-centric EMD

(b) Without feature-centric EMD

(c) With feature-centric EMD
• Experiments and Evaluations
  • Comparisons Over Different Complex Videos
    • Videos With Repeatedly Back-And-Forth Panning

Original

The method proposed by Okade et al.

Our method
• Experiments and Evaluations
  • Comparisons Over Different Complex Videos
    • Videos with Rolling Shutter Effects
Limited to the size of the uploaded attachment in the website, we can’t show too many videos in this attachment, but we will publish other videos later.

We hope that our MOOP is satisfactory. Should you have any questions, please don’t hesitate to contact with Dr. Li (lixiao@nudt.edu.cn).

Thank you for your kind and favorable consideration for our MOOP. We look forward to hearing from you soon.
We compare our results with some previous results shown in [Goldstein and Fattal 2012; Liu et al. 2013; Liu et al. 2014; Okade et al. 2016]. We collect twelve test videos from these papers (thumbnails in the above diagram), and compare our results with their published results (all from the project web pages of the authors). Overall, all methods generate similar stability both subjectively and quantitatively (the second and third line of the graph above) on these examples, while our results are slightly better on some videos in terms of cropping ratio.
The end
Thank you!