

# TPA : Panorama Generation from Videos with Significant Blur

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**Problem Statement:** Generate a sharp panorama from videos with considerable amount of motion blur. The panorama generated should be devoid of blur and ghosting effects. Select and experiment on the videos from the given datasets, which have motion blur and pans a scene vertically or horizontally.

## Input:

- A video which has motion blur

## Expected Output:

- A panorama image of the video.

## Dataset:

- DeepVideoDeblurring\_Dataset [8].
- Stabilization dataset [9].

**Hint for excellence:** Extra points will be awarded if your software can handle videos with one or more moving objects. Also, extra points will be awarded if a dataset with videos with motion blur are created by the students and experimented.

## References

1. Li, Yunpeng, et al. "Generating sharp panoramas from motion-blurred videos." IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2010.
2. Brown, Matthew, and David G. Lowe. "Automatic panoramic image stitching using invariant features." International journal of computer vision 74.1 (2007): 59-73.

3. Zaragoza, Julio, Tat-Jun Chin, Michael S. Brown, and David Suter "As-projective-as-possible image stitching with moving DLT." Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2013
4. Onogi, M. and Saito, H. Mosaicing and restoration from blurred image sequence taken with moving camera. Pattern Recognition and Image Analysis (2005): 598-607.
5. Tae Hyun Kim, Kyoung Mu Lee, Bernhard Schlkopf, Michael Hirsch, "Online Video Deblurring via Dynamic Temporal Blending Network", IEEE International Conference on Computer Vision (ICCV), 2017.
6. Delbracio, Mauricio, and Guillermo Sapiro. "Hand-held video deblurring via efficient fourier aggregation." IEEE Transactions on Computational Imaging 1.4 (2015): 270-283.
7. S. Su, M. Delbracio, J. Wang, G. Sapiro, W. Heidrich, O. Wang. Deep Video Deblurring. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017,
8. [http://www.cs.ubc.ca/labs/imager/tr/2017/DeepVideoDeblurring/DeepVideoDeblurring\\_Dataset.zip](http://www.cs.ubc.ca/labs/imager/tr/2017/DeepVideoDeblurring/DeepVideoDeblurring_Dataset.zip)
9. <http://liushuaicheng.org/SIGGRAPH2013/database.html>