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Assignment 2 Report

Image stitching is the process of combining multiple photographic images with overlapping fields of view to produce a segmented panorama or high-resolution image.

It has been implemented with the following functions :

1. Gaussian Blur has been applied on the 2 overlapping images.
2. Corners are detected using Harris Corner Detector.
3. The common corners have been marked manually in the original image.
4. Perspective Transformation matrix has been obtained using Singular Value Decomposition. It is the generalization of the eigen decomposition of a positive semidefinite normal matrix (for example, a symmetric matrix with positive eigenvalues) to any matrix via an extension of the polar decomposition.
5. The transformation matrix has been applied on the images using transformation matrix multiplication.

I have varied the number of manually marked common corners from 4 to 24 in number, and observed the following results.

Image stitching gives a better accuracy with a higher number of manually marked corner points. This has been demonstrated by storing the outputs of my trials in the **Outputs** folder.
The file output4.jpg indicates the result of image stitching with 4 manually marked common points, and so on.

Conclusion :

Higher the number of manually marked corner points, higher is the accuracy and clarity of image stitching.