Abstract

Image Stitching is application of image registration in which images with few overlapping are aligned and stitch together to form wide angle images. Image registration is the fundamental task used to match two or more partially overlapping images taken, for example, at different times, from different sensors, or from different viewpoints and stitch these images into one panoramic image comprising the whole scene. It is a fundamental image processing technique and is very useful in integrating information from different sensors, finding changes in images taken at different times, inferring three-dimensional information from stereo images, and recognizing model-based objects. Some techniques are proposed to find a geometrical transformation that relates the points of an image to their corresponding points of another image. To register two images, the coordinate transformation between a pair of images must be found. In this paper, proposed algorithm is based on Log-Polar Transform and first roughly estimate the angle, scale and translation between two images. The proposed algorithm can recover scale value up to 5.85. In order to improve the insufficiency of Harris corner, proposed method present an auto-adjusted algorithm of image size based on NGC. The robustness of
this algorithm is verified on different images with similarity transformation and in the presence of noise and finally by using RANSAC algorithm smooth stitching can be obtained than any other methods.

References

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Index Terms

Computer Science  Image Processing
Keywords

Log-Polar Transform (LPT), Fast Fourier Transform (FFT), Normalized Gradient Correlation (NGC), Random Sample Consensus (RANSAC), Direct Linear Transform (DLT), Scale Invariant Feature Transform (SIFT).