



A fundamental step in stitching several pictures to form a larger mosaic is the computation of boundary seams that minimize the visual artifacts in the transition between images. Current seam computation algorithms use optimization methods that may be slow, sequential, memory intensive, and prone to finding suboptimal solutions related to local minima of the chosen energy function. Moreover, even when these techniques perform well, their solution may not be perceptually ideal (or even good). Such an inflexible approach does not allow the possibility of user-based improvement. This paper introduces the Panorama Weaving technique for seam creation and editing in an image mosaic.

First, Panorama Weaving provides a procedure to create boundaries for panoramas that is fast, has low memory requirements and is easy to parallelize. This technique often produces seams with lower energy than the competing global technique. Second, it provides the first interactive technique for the exploration of the seam solution space. This powerful editing capability allows the user to automatically extract energy minimizing seams given a sparse set of constraints. With a variety of empirical results, we show how Panorama Weaving allows the computation and editing of a wide range of digital panoramas including unstructured configurations.