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Image Warping Using Radial Basis Functions

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Abstract

Image warping is the process of deforming images to other shapes. After knowing where some particular points in the image should move to, this problem can be reduced to a mathematical problem of finding a smooth mapping of the whole image onto itself. Thin plate spline is one of the commonly used methods to solve such a problem. However, we discover that the thin plate spline algorithm produced unwanted serious distortions in our simulations. In this paper, we first analyze the effect of the thin plate spline on. Then we propose to use splines with other basis functions that can provide better results on image warping.

Index Terms

Thin plate spline, image warping, image morphing, data interpolation.