

Content-aware Seam Carving for Accurate Image Upscaling

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Motivation: Low resolution content looks blocky on high resolution displays. Many algorithms exist to interpolate low resolution images into higher resolution and sharpen them. In this work, we explore using content-aware algorithms based on seam carving to produce images that lose less detail for higher resolutions.

Goal and Methodology

Goal: Create better looking high resolution images generated from low resolution images by utilizing seam carving and content-awareness.

Plan of Action

1. Implement seam carving for enlarging images
2. Reduce object shearing by three methods: change the energy calculation algorithm, manual subject matter indication, and automatic edge detection
3. Evaluate against each other and original images to

Dataset and Initial Results

- Images of various sizes
- Basic seam carving for aspect ratio changes results in distorted images
- Want to compensate for edges in order to reduce distortion to original image for final report



Original: 230x300



Enlarged: 360x360