

PatchMatch: A Randomized Correspondence Algorithm for Structural Image Editing

(a) Original (b) Inpainting (c) Retarget (d) Reshuffle

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¹Princeton University, ²Adobe Systems, ³University of Washington

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Roadmap

Motivation PatchMatch Algorithm Interactive Editing

Traditional Photo Editing

(played back at 10x real-time)

Higher Level Editing

Retargeting [Avidan '07] Hole filling [Sun '05]

Reshuffling [Simakov '08], [Cho '08]

User Interaction

Retargeting [Avidan '07] Hole filling [Sun '05]

Reshuffling [Simakov '08], [Cho '08]

Non-Parametric Patch Sampling

Image retargeting [Simakov et al. '08]
(5 minutes per 250x200 input image)

Non-Parametric Patch Sampling

Image reshuffling/collage [Simakov et al. '08]
(5 minutes per 250x200 input image)

PatchMatch

Iterative Optimization Methods

Retargeting and Reshuffling [Simakov '08]

Texture Synthesis [Kwatra '05] Hole Filling [Wexler '04]

Hole Filling

```

    graph LR
      A[Initialize hole] --> B[Find NN inside -> out]
      B --> C[Update image]
      C --> B
      C --> D[Repeat]
      D --> B
  
```

[Wexler '04]











