### Document Information

<table>
<thead>
<tr>
<th>Title</th>
<th>Video morphing: special effects in digital media</th>
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<tbody>
<tr>
<td>Author(s)</td>
<td>Murugan, Ayyappan</td>
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Video Morphing – Special Effects in Digital Media

Objective

- To produce video morphing using image morphing techniques.
- To improve video morphing by accelerating the morphing process.

Video Morphing

- Process of transforming a source video into a target video.

Image Morphing

- 2 images – Source, Target.
- Feature lines drawn in source and target.
- Feature lines interpolated to get intermediate feature lines.
- Feature lines used to map pixels in warped images and original ones (source and target).
- The two warped images are now blended to get final result.

Acceleration

- Instead of warping pixel by pixel, image can be divided into grids, warping is calculated only pixels at grid corners and other pixels inside the grid are linearly interpolated.

Acceleration Results of Warping the Source Image

<table>
<thead>
<tr>
<th>Grid Dimensions</th>
<th>Acceleration</th>
<th>Error (PSNR)</th>
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<tbody>
<tr>
<td>2 x 2 pixels</td>
<td>3.8 times</td>
<td>37.25</td>
</tr>
<tr>
<td>8 x 8 pixels</td>
<td>23 times</td>
<td>17.89</td>
</tr>
<tr>
<td>16 x 16 pixels</td>
<td>28.8 times</td>
<td>9.68</td>
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PSNR – Peak Sound to Noise Ratio of the image (higher the value, the more accurate it is).