



IMAGE MORPHING USING HYBRID MESH-KLT ALGORITHM

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Abstract: Image morphing provides visual effects in TV and film. Image Morphing springs from the word Metamorphosis. Transition of source image to target is termed as Morphing. This is frequently used in an animation technique that morphs the initial image into the final image. The morphing strategy has 2 stages: Starting point it warps 2 pictures to possess similar form and in later step it cross dissolves ensuing pictures. This paper uses hybrid mesh-field warping methodology to make a structure of image morphing of facial animation with low simplicity. An attempt is made in morphing using hybrid mesh-KLT algorithmic rule combined with Cross Dissolving technique. During morphing method, the program can output N range of pictures. These pictures are used consecutive to develop a brief animated sequence.

Keyword: Hybrid rule, Image Morphing, Mesh warping, Feature-based.

I. INTRODUCTION

Image morphing technique is employed for digital image process and as animation tool [1]. Morphing of pictures is incessantly evolving and turning into a challenging field in information security and knowledge activity [2]. It's a special technique that easily transforms one graphical object into another object and it animates over some time. [1]. Before the image warping method was known, image morphing was through with the assistance of the cross-dissolving of pictures, wherever one image is light out and alternative image is light in. This technique wasn't therefore effective in signifying the metamorphosis.

seen and morph doesn't look natural. 3 steps are involved in obtaining real and even transformation of pictures [3]. Morphing is additionally utilized in medical imaging field for sick options that aren't visible in pictures by finding relative options among multiple couple of scanned pictures. Morphing is wide utilized in recreation area, motion picture animations, multimedia system, academic and pc primarily based coaching. Advanced morphing techniques utilized by film manufacturers from Hollywood to come up with computer graphics [4]. For fast production, even movie maker animations are created using morphing. There are only a few more techniques are out there for generating face morphing, as a result of that this domain sees inflated research interest [4].

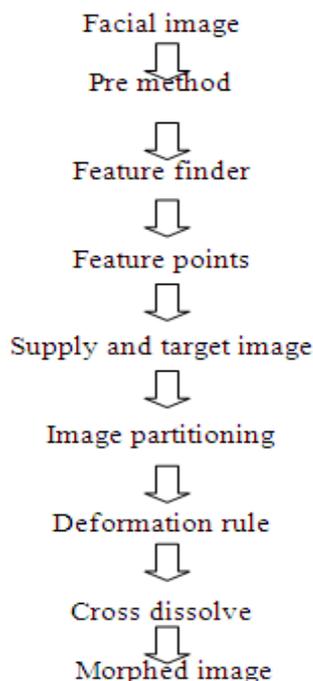


FIG 1: DIAGRAM OF IMAGE MORPHING METHOD

Additionally to the present, during face image morphing the double exposure result within the eyes and mouth areas is

II. PROBLEM DEFINITION

This paper presents development of a picture Morphing software application by utilising KLT rule in MATLAB that helps in morphing pictures. Morphing is the method by which one image easily transforms into another. The mathematical formulas are used to calculate intermediate pictures from the supply and target pictures. Mesh deformation technique is employed in hybrid with KLT rule is employed to implement image morphing (5).

III. METHODOLOGY

THE ALGORITHMIC PROGRAM IS AS FOLLOWS:

THE KLT RULE CAN DEVELOP AN EASY FACE TRACKING SYSTEM BY DIVIDING THE TRACKING DRAWBACK INTO 3 PARTS:

1. ESTABLISH A FACE
2. SIGHT FACIAL EXPRESSION TO TRACE
3. TRAILING THE FACE

The translational image registration drawback is characterised as follows: Given 2 functions $P(x)$ and $Q(x)$, representing values at every location x , wherever $P(x)$ is a vector, in 2 pictures, severally, we tend to search out the inequality vector h , that minimizes some live of the distinction between $P(x+h)$ and $Q(x)$, for x in some region of interest R . [6]

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produce a cascade detector object.
faceDetector= vision.CascadeObjectDetector();
% Read a video frame and run the face detector.

videoFileReader=vision.VideoFileReader('tilted_face.avi');
videoFrame= step(videoFileReader);
bbox = step(faceDetector, videoFrame);

% Draw the returned bounding box around the detected face.
videoFrame = insertShape(videoFrame,
'Rectangle',bbox);figure;imshow (videoFrame);
title('Detected face');
% Convert the first box into a list of four points
% This is required to be able to visualize the rotation of the
item.
bboxPoints = bbox2points(bbox(1, :));
    
```

IV. PRE-PROCESSING

Morphing of facial image is developed by using MATLAB package. Before morphing method some higher methods like pre-processing i.e., resizing and enhancing images are used. Image size is made fixed 256*256 yet because it is increased by using median filter.

V. FEATURE FINDING

KLT rule from Matlab is employed to sight feature points. It detects feature points like faces, noses, eyes, mouth, or facial upper body. The competitive object detection rates in real time were analysed by KLT object detection framework. This framework is trained to sight a range of object categories, however primarily it was actuated for the problem of face detection.

The feature provided by the detection framework is nothing however the sums of image pixels among that rectangular space of image[7]. The options employed by KLT rule all rely upon quite one rectangular space, that are typically a lot of advanced. The worth of any given feature is up to the total of the pixels inside rectangles.

Rectangular options of the facial image square measures primary in comparison to alternative filters like manageable filters. Though they're tender to vertical and horizontal options, their feedback is usually rough. However, rectangular options are calculated in constant time, with the help of a picture illustration called the integral image, which provides them speed advantage.

As a result every rectangular space in a feature is generally contiguous to a minimum of one different rectangle, it shows that any two-rectangle feature is calculated in six array references,[8] where any 3 rectangle feature is stored in eight array references, and any four-rectangle is stored feature in only 9 references.

VI. RESULT AND DISCUSSION

Experimental Results are obtained with success by implementing KLT-Mesh warping rule.

Image one shows original image that's supply image that we've got to morph in line with target image, before morphing it's got to do pre process like resizing image to a set price and increased image by using median filter.



Fig 2:Result of Image Partitioning

The steps that are followed for this morphing process are (a) Detected management Points (b) partitioned off Image equally we've to try and do all operation on course image. When partitioning of supply and target image, we've to warp pictures mistreatment Mesh deformation and that we get intermediate pictures[9]. Crooked pictures square measure cross dissolved as per following output. Image four shows all result pictures in output window of MATLAB package (10).

VII. CONCLUSION & FUTURE WORK

Image morphing is enforced with the assistance of hybrid KLT- mesh deformation technique. Many simple attributes, like visual quality of morph, the convenience with that the animator will choose options like eyes, nose and mouth with the assistance of our enforced paper. The algorithms we used have a tendency to work quick and spontaneous, which accurately computed the mapping of every pixel from the supply image to the destination image. The mesh was fashioned of quadrangles obtained from the desired nine management points. This polygon meshes square measure plays important role in deformation method. These meshes square bind the line with target image. Mesh deformation breaks pictures into little region and maps pixel to pixel from supply to focus on image. Therefore it's straightforward to matched eyes, mouth, nose & edges of higher body. In cross dissolve technique 1st frame is usually supply image and last frame is usually target image and numbers of intermediate pictures square measure created. We've noticed in it that a lot of the numbers of frames higher were the morphed results and animation is definitely created. We have a tendency to found that, to induce best results Mesh Morphing is an efficient technique. Future work can combine other algorithms in the place of KLT algorithm and can obtain better results.

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