

## Abstract

Today, cartoon movies have become an important part of the entertainment business. One of the difficulties in making a cartoon movie is that a lot of frames are needed to create smooth movement.

In this final project, a feature morphing technique is implemented on the smoothing process between frames in a cartoon movie by generating automatically the in-between frames. In this technique, a warping process that is vector-based interpolation and cross-dissolve that is color interpolation depend on the source image, destination image, and feature line as the point-key for the main object that will be changed.

The tested parameters are: frame count, feature line count, time process, in-between frame quality, and the smooth output.

From the evaluation, it is concluded that a feature morphing technique gives a good quality if implemented on an image with an object that is visible all the time, moves in one direction, and is transformed: form change, rotation, and color change. On the other hand, a feature morphing technique will not give a good quality if implemented on an image with an object that is not visible all the time or covered by another object, there are two or more objects that move in different directions, and translation. From the time process, this feature morphing implementation can reduce the time process to create in-between frames on the smoothing process in a cartoon movie.

**Keyword:** *feature morphing, warping, cross dissolve, cartoon movie, smoothing, feature line, frame.*