Manga Colorization: Project Proposal

Project Id: 15

Team Name: IFHTP

Team Members:

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Link to repository: https://github.com/Digital-Image-Processing-IIITH/dip-project-ifhtp

Main Goals

The primary goal of our project is to implement the black and white manga colorization method proposed in this paper. We also aim to make a webapp which uses the same implementation to colorize any black and white manga which follows a specified format.

Problem Definition

The Japanese manga is distinctive from traditional Western comic books in presenting fine details. The color manga can express even more semantics and artistic styles. However, mangas are seldom colored as coloring is time-consuming and labor-intensive.

Normal black and white images can be colorized using intensity based colorization methods, which mainly rely on a “rough” continuity of gray levels to grow the affective regions, so as to segment the image into color regions.

But unfortunately, we cannot use the same method on black and white manga images since they contain intensive usage of strokes, hatching, halftoning, and screening which introduce a lot of fine details and discontinuities in the intensity of the images which introduce difficulties for the intensity based colorization method.

Normal Black and White Image

Manga Image

We propose to segment the image by applying a novel texture-based level set method which propagates boundary curves over regions with similar but not necessarily homogeneous patterns. And once the segmentation is done, we can colorize the regions using various methods like leak-proof colorization of intensity-continuous regions, colorization of pattern-continuous regions while preserving the original textures or structures of the patterns or pattern-to-shading conversion for patterns expressing shading only.

Results of the project

An implemention of the manga colorization technique discussed in the paper along with a webapp which uses the implemented code to colorize black and white manga-like images and display them.
For Example:

Black and White Manga Image

Colourized Manga Image

Milestones & Timeline

Timeline	Milestones
5th November 2021	Project Allocation
9th November 2021	Project proposal submission
Week 1	1. Image Collection 2. Literature Review
Week 2	Implement the procedure for image colourization
Week 3	Generate Results and create UI
29th November 2021	Code Freeze
Week 4	Prepare for presentation
2nd-4th December 2021	Final Evaluation

DataSet

We are collecting images from some sources like site 1 and site 2 and storing them in this folder:
We will be keeping the

- Black and white manga image
- Black and white manga image with the color storkes required
- Output of our implementaion on the black and white manga image
- Original/Colored version of the black and white manga image if available