CS 663 - Project Abstract
Toonification using Image Abstraction

Team Members

- 150050006 Rishabh Shah
- 150050099 Shriram S B
- 150010041 Anmol Mishra

Objective

We plan to implement the paper Flow-Based Image Abstraction (2009) paper to non-photorealistically render natural images to simplify the visual cues and convey certain aspects of the scene more effectively. We will use Edge Tangent Flow (ETF) to ensure smooth, clean and clear lines. Flow-based DoG filter (uses ETF) will be used for line extraction and Flow-based Bilateral Filter (uses ETF) for enhancing shapes and feature directionality. Using flow information helps ensure sharp edges and rich segmentation abstraction, giving aesthetic toonified pictures.

DataSet and Evaluation Metrics

We intend to use General 100 image data set from CV Online Image Database as sample images to test our algorithm. We will cartoonify these images and check manually how our algorithm (with its fixed hyper parameters) works for this diverse set of natural images. We wish to achieve the level of sophistication as can be seen in Figure 1.

References:

[1]: Flow-Based Image Abstraction, Henry Kang, Seungyong Lee, and Charles K. Chui, IEEE Transactions on Visualization and Computer Graphics Vol. 15, No. 1, January/February (2009)

Figure 1 - Top image : Original natural Bottom image : Toonified version
Image courtesy: [1]