CS 766 Project Midterm Report

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Current Progress

Most of our current progress toward the completion of our project has gone to implementing the GrabCut portion of the project. Some of the working parts of the project includes initializing the GMM components of the system, as well as Initializing the Trimap of the source image. We also have completed some of the steps for iterative refinement of the alpha-map separating the image foreground and background. A full list is included below:

-Initializing GMMs

-Initializing Trimap

-Assigning K values to Pixels

-Distance function (D) as described in the GrabCut paper

-Calculating new GMM components

-Generate edges for min-cut algorithm

Current Results

-Initial GMMs and Trimaps have been generated and tested for correctness

Images below show masking of image based on initial alpha map (derived from trimap):

Difficulties:

Some of the implementations use information from other papers, however some of the implementation details are changed between the two papers, but explanations of the changes are skipped over, which leads to difficulty in implementation.

We are using MATLAB for implementation of the algorithm. Unfortunately, MATLAB does not seem to have many tools for graph algorithms, which has made implementation of the graph cut portion rather difficult.

Changes to proposal in light of current progress:

-Due to difficulties getting the MinCut portion of the algorithm to work properly it is likely that we end up cutting time that was designated for color correction strategies. Due to this time constraint we will likely use a simpler strategy for color correction.

-In addition, we plan to wait on border matting until we have completed both Lazy Snapping and GrabCut algorithms. If time becomes too short, we may have to skip border matting.