

Motion Segmentation for ChromaKey in Video Sequences

Nkiruka Chuka-Obah

Department of Electrical Engineering, Stanford University

Background

ChromaKey is the technique of fusing two images together via Color segmentation.

One of the most popular applications is television

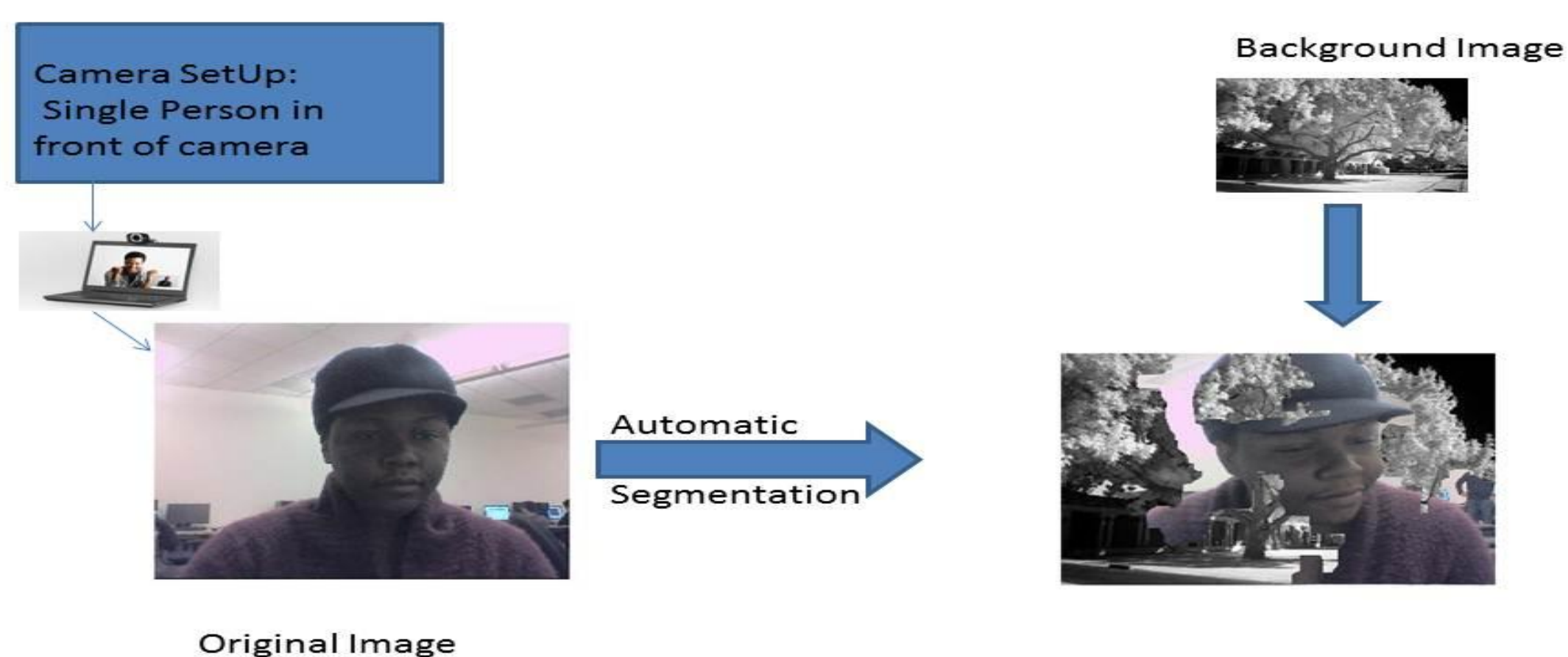


DrawBack: The need for a solid color background for color segmentation

Proposal: Segment with motion, assuming:

- 1) User is only moving object in video
- 2) Background is static

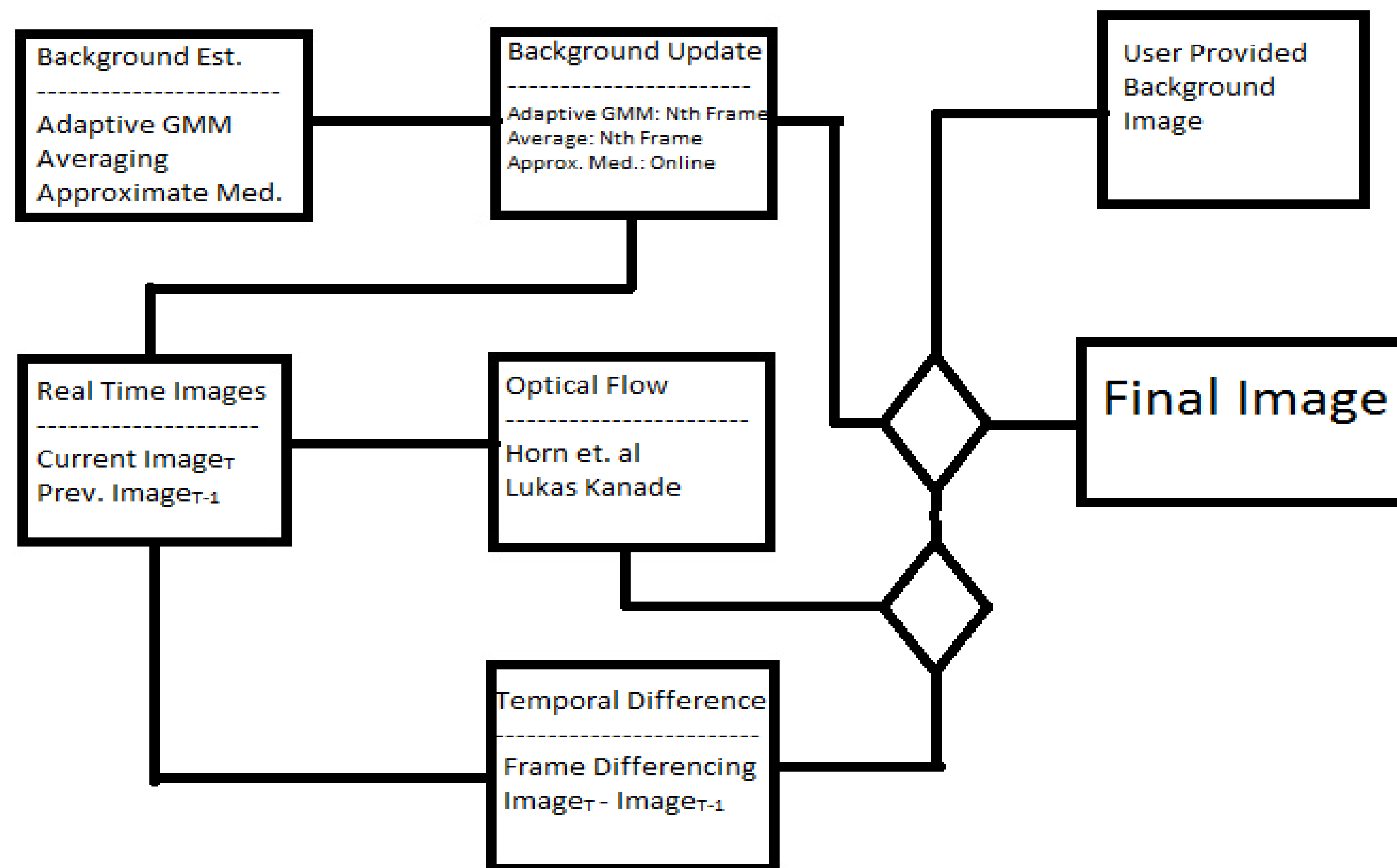
Results



Improvements:

- Segmentation is not 'clean': Need to perform better segmentation, to remove holes in the moving object
- Incorporate Color: Use of color with background segmentation may improve person segmentation

Segmentation Algorithm



Background Subtraction:

- Multiple Algorithms to allow user to see effect on real time processing
- Adaptive GMM done via MATLAB's foreground detection

Optical Flow:

- Lucas-Kanade Optical Flow algorithm calculated at every point
- Option offered to use MATLAB's Horn-Schunck algorithm