Project Report:
Stereo Matching using Graphcut-based Optimization

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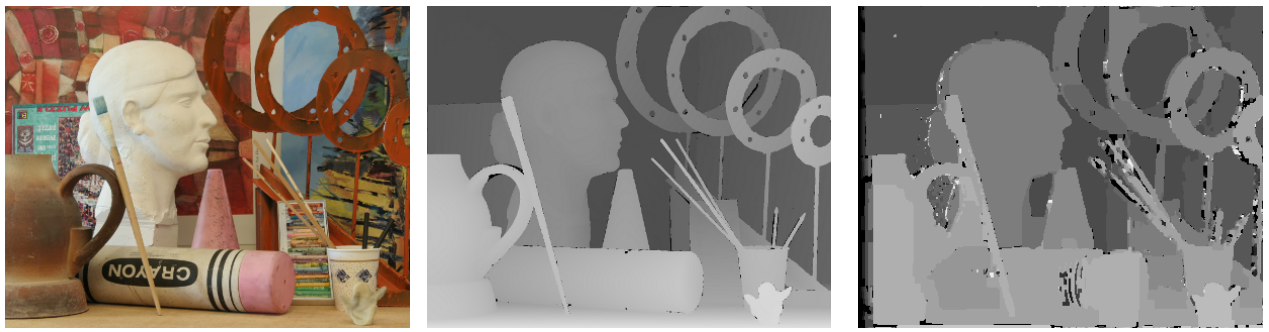
I. INTRODUCTION

In this project we developed a stereo matching system based on graph-cut optimization framework [1]. In stereo matching problem, 2 images taken from 2 cameras that are in the same hozirontal like The input to the system is a pare of images

REFERENCES

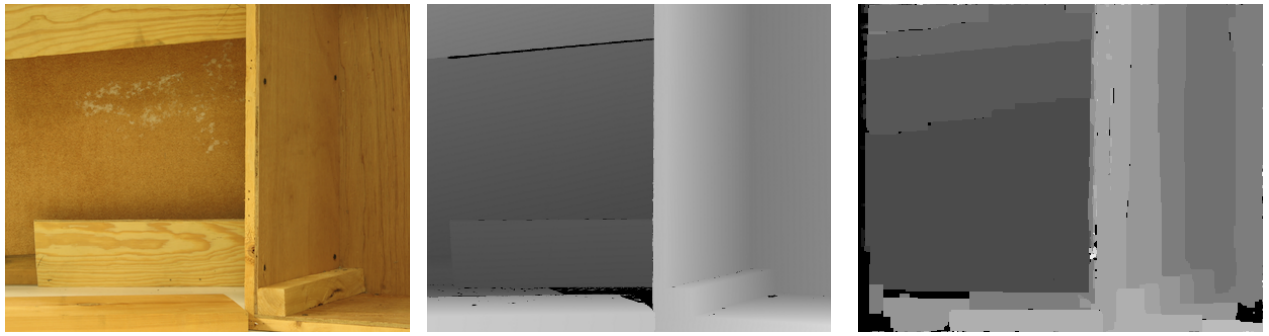
[1] Y. Boykov, O. Veksler, and R. Zabih, "Fast approximate energy minimization via graph cuts," *Pattern Analysis and Machine Intelligence, IEEE Transactions on*, vol. 23, no. 11, pp. 1222–1239, 2001.



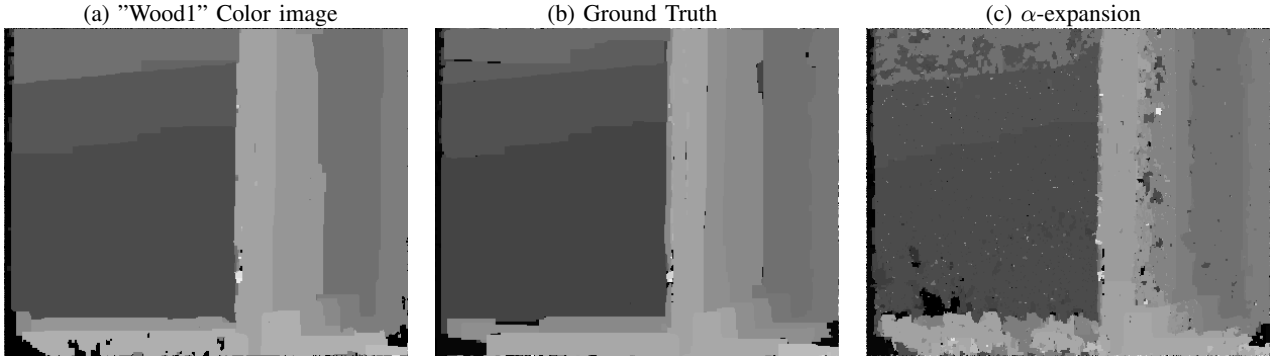
(a) "Art" Color image (b) Ground Truth (c) α-expansion

(d) $\alpha\beta$-swap (e) α-expansion - subpixel accuracy (f) $\alpha\beta$-swap - subpixel accuracy

Fig. 1: Disparity image for the "Art" dataset using the both $\alpha\beta$-swap and α-expansion with pixel and subpixel accuracies.



(a) "Wood1" Color image (b) Ground Truth (c) α-expansion



(d) $\alpha\beta$-swap (e) α-expansion - subpixel accuracy (f) $\alpha\beta$-swap - subpixel accuracy

Fig. 2: Disparity image for the "Wood1" dataset using the both $\alpha\beta$-swap and α-expansion with pixel and subpixel accuracies.