CMPSC 181 Prog2 Written Report

This implementation uses the Sum of Squared Differences (SSD) algorithm for stereo disparity estimation. SSD is a block-matching approach where small image patches from the left and right images are compared by calculating the sum of squared differences. The disparity value corresponding to the minimum SSD is assigned to each pixel. To handle occlusions, unmatched pixels are set to black. The disparity values are scaled to grayscale intensities using a specified scale factor.

Disparity maps are more accurate on images with gradual depth changes since SSD can find clear matches. At object edges and sudden depth changes, SSD struggles due to occlusions and mismatches.

The program prog2.py takes in left_image, right_image, scale_factor, and output_image arguments. The image arguments must be valid paths while the scale must be a number.