Step 1: Load the stereo pair images.

tsukuba3.png is the *right* image

tsukuba4.png is the *left* image

Convert them to grayscale and then convert to floating point and divide by 255.

Stereo Pair

Step 2: Compute the block SSD matching cost for a range of disparities.

Create a 3D cost matrix of size heigh x width x 16. Set all values to infinity (np.inf).

Psuedo-code for testing disparities:

```
w = image width
for i = 1 to 16:
    Crop left image to columns i:w
    Crop right image to columns 0:w-i
    Compute the squared difference between the two crops
    Compute the sum squared differences (SSD) over an 11x11 window (cv
2.boxFilter)
    Store the result into columns 0:w-i of the (i-1)-th cost matrix sl
ice
    end
```

Step 3: Compute and display the minimum cost disparity image.
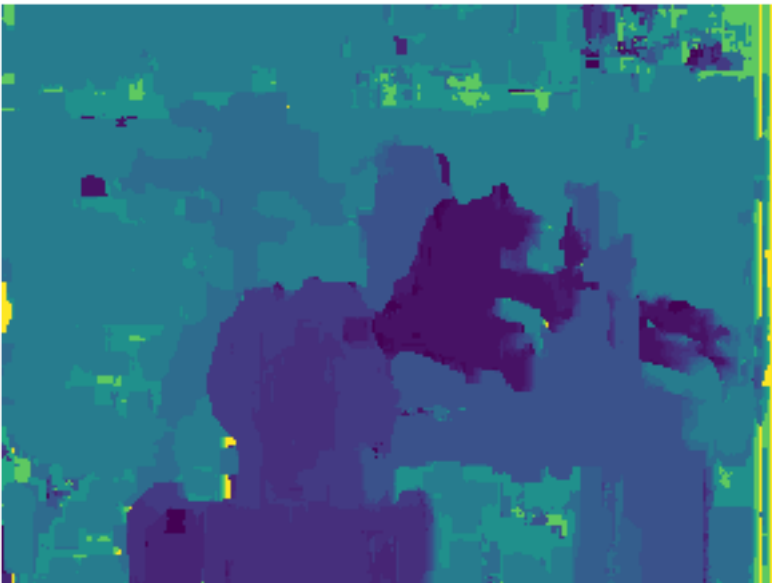
Use np.argmin().

Disparity Map
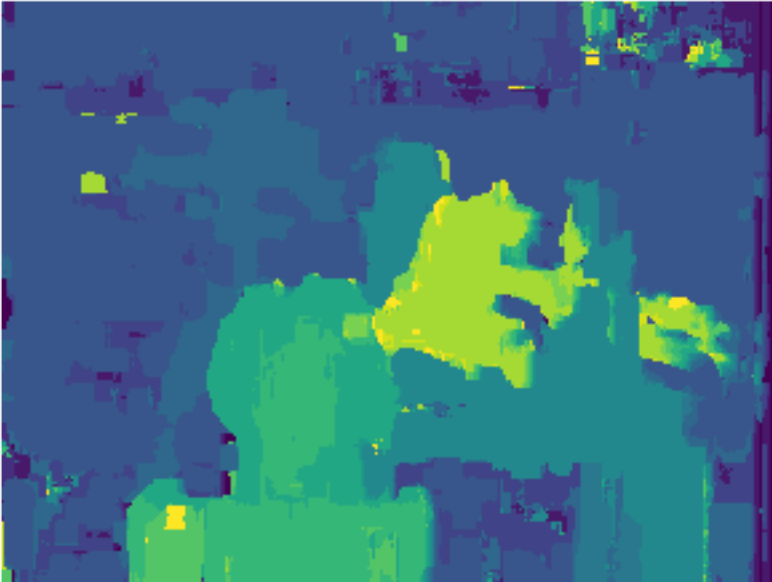
Step 4: Compute and display the negative log disparity image.
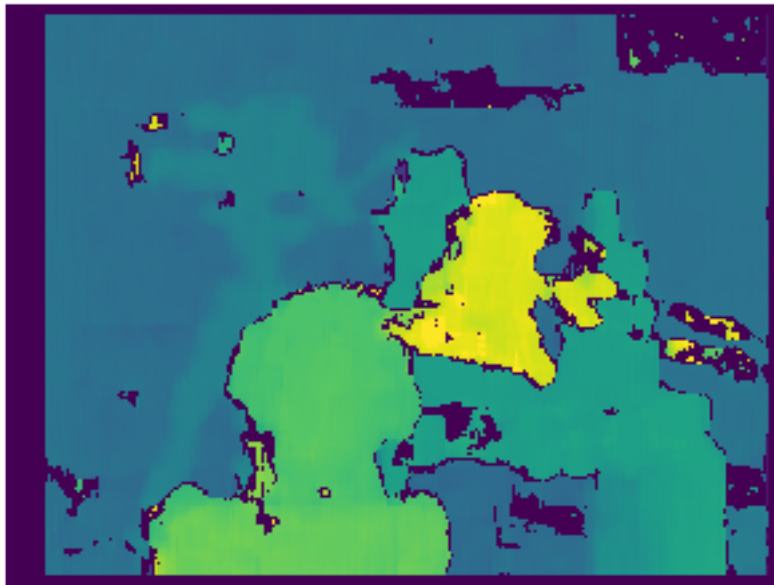
Note that negative log disparity = log depth.

Log Depth Map

Step 5: Compute and display the disparity maps produced by OpenCV's StereoBM and StereoSGBMD modules.

StereoBM Disparity Map

StereoSGBM Disparity Map