Detection method comparison

Keerthi code logic	Keerthi code	Bingxing code
1. Removing background	top-hat transform	Gaussian filter; distinguish saturated and unsaturated part of the image
2.1 Feature: threshold intensity	>=30	variable, depend on the image histogram
2.2 Feature: H-maxima threshold	h=35	N/A
2.3 Feature: cell size	<=2500 pixels	> 60 pixels (diameter 4 microns)
2.4 Feature: eccentricity	<=0.95	<=0.95
3. Morphological operations (Sukhendu's post-processing)	3.1 convolve binary mask of cells with original image to generate the grayscale image -> 3.2 Gaussian smoothed image -> 3.3 threshold to generate a binary image; edges are detected to generate Euclidean distance map -> 3.4 combine the binary and the distance map -> 3.5 Gaussian smooth -> 3.6 find peak in the smoothed intensity map	3.1 remove small areas with pixels less than 20 3.2 fill holes 3.3 distinguish large patches of cells and single neurons

Features in Bingxing's code (red shows different features):

1. threshold intensity
2. eccentricity
3. cell size (> 4 microns/cell)
4. SNR (>=2 bits)

5. centroid distance (> 4 microns/pair)