My code used Java language. Make sure your machine can run Java program. The version of my SDK is 11.

1. Download the code. Run 'GUI.java' in your IDE. My IDE is IntelliJ IDEA. After downloading, I need to specific the source and output folder and SDK in File-> Project Structure.
2. You can see my interface. Now, click the button 'Upload' to upload an image. After uploading, you will see your image at the right of the interface.
3. Optional: If you think your image is too dark, click "Increase Contrast". You can click that button as many times as you want. And you will see your result at the right of the interface.
4. Draw the interest-range.

   a. Select the color and width of your points and lines.

   b. If you want to draw a rectangle range, click "Draw a rectangle". And then you can draw only two points on the image. These two points are diagonal points of the rectangle range. Then you can click 'Complete' button, it will draw a rectangle automatically.

   c. If you want to draw a polygon range, click "Draw a polygon". After clicking this button, you can draw as many point as you want on the image. These points are points of the polygon. Remember you need to draw your points clockwise or counterclockwise, because I will connect these points in the order in which you draw them to form a polygon. Then you can click 'Complete' button, it will connect points automatically.

5. Optional: If you draw a wrong point, you can click "Undo" button to delete it. You can undo as many times as you want until there are no points on the image.
6. Inputkvalue.Therangeofkvalueisfrom1to10.Differentimagesmay have different k values to get the best results.
7. Click 'Run' button. After clicking this button, I will use my algorithms to process your images. And you will see the cell on the image which you uploaded before. You will also see the length of the cell at the bottom of the image.
8. Click 'Erase' button to clear the canvas. You can continue to draw a new range or upload a new image.
9. Click 'Download' button to download processed images.