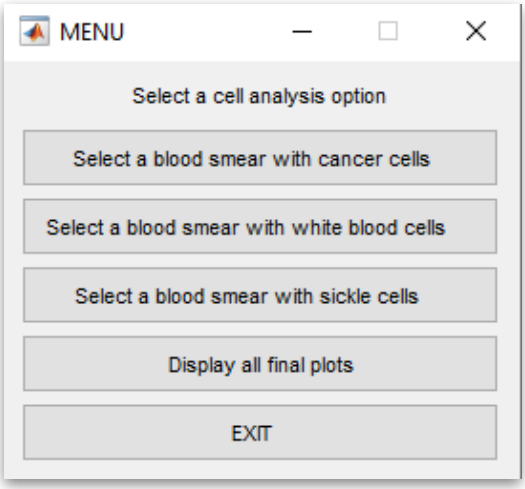
CellSmo An interactive blood smear analysis application

Key Features

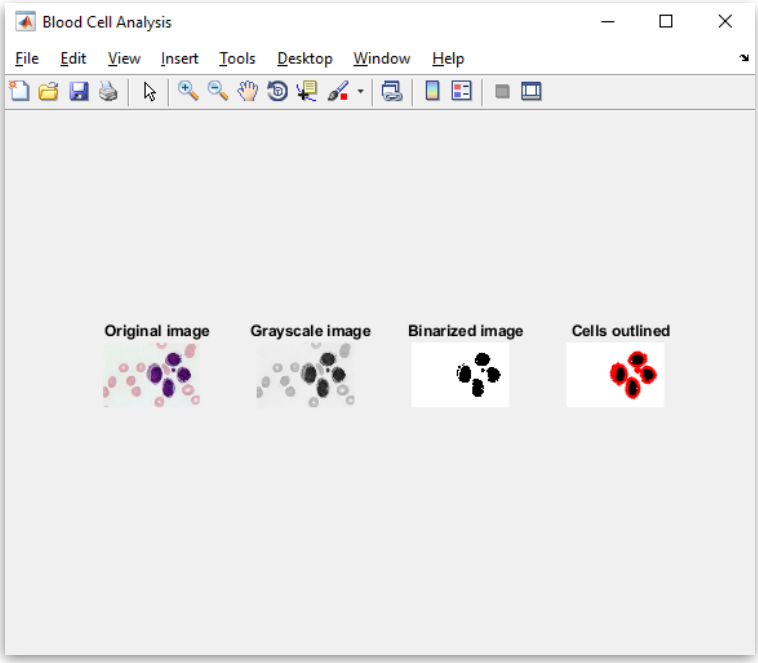
There are 3 main features to this application. Each of the features deal with analyzing a certain type of blood smear (blood smear with cancer cells, blood smear with white blood cells, and blood smear with sickle cells present).
The features are similar in the sense that they will try and isolate the cells of interest for further inspection as needed.

How does it work?



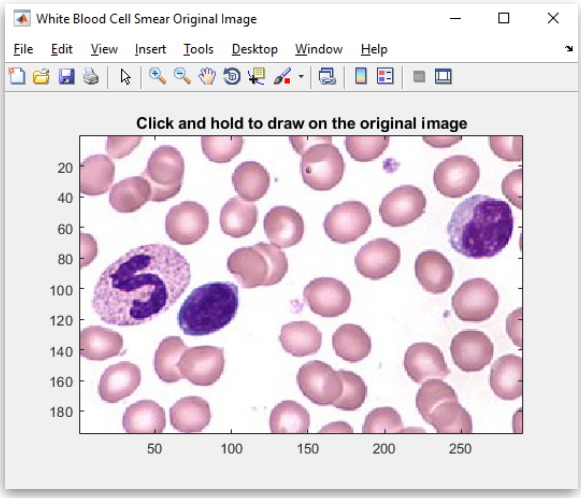
- One of the most important features about this app is how compact and easy it is to use with a very user friendly menu! There are 3 cell analysis options. For the first cell analysis option all you have to do is load in your chosen cancer cell smear. After choosing your desired analysis option, simply load in your file and let the application display your results.

- The cancer cell smear analysis consists of outlining the potential cancer cells in red. This helps by restricting the area and focusing in on the potential cancer cell for further in-depth studying or research.



- On the left you can see that the cancer blood smear selected gets displayed 4 different ways for various methods of analysis. The original image, along with the grayscale and binarized image serve to highlight and differentiate the colors in the blood smear. This can lead to certain aspects of the cell being visible in the grayscale and or binarized version. The last image on the right side is the original image but the cells are binarized and there is a circle around the potential cancer cells. This serves to isolate as opposed to differentiate as the images represented before.

- Displayed on the right is the second analysis option involving white blood cells.
- Click and hold down left click to draw an outline around the cell of interest and it will open up a separate figure and be highlighted on the original image. This serves to isolate the cell of interest.



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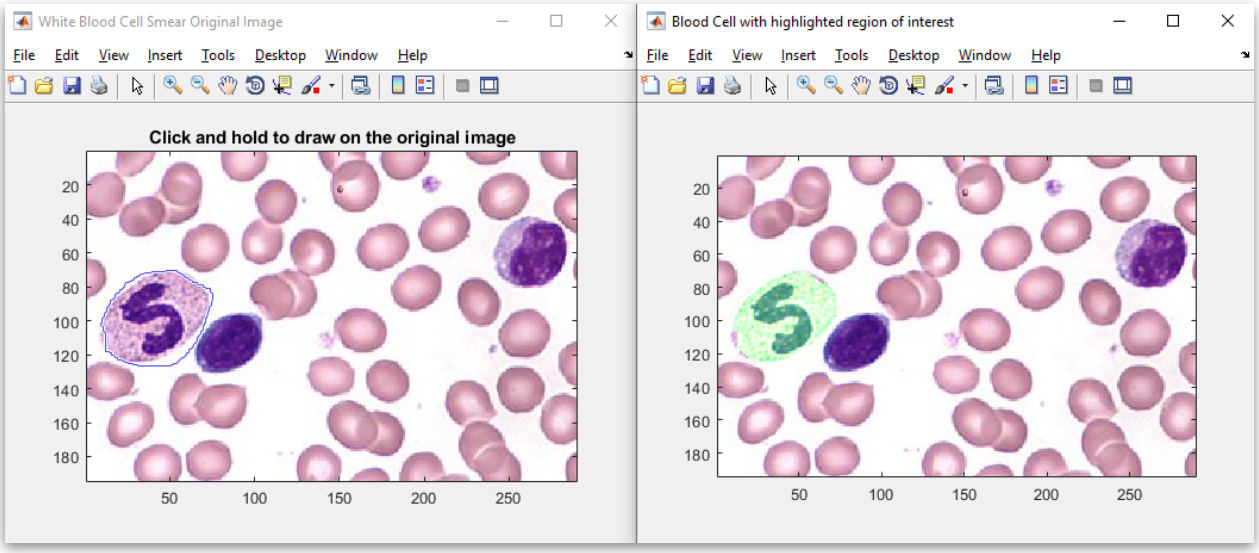
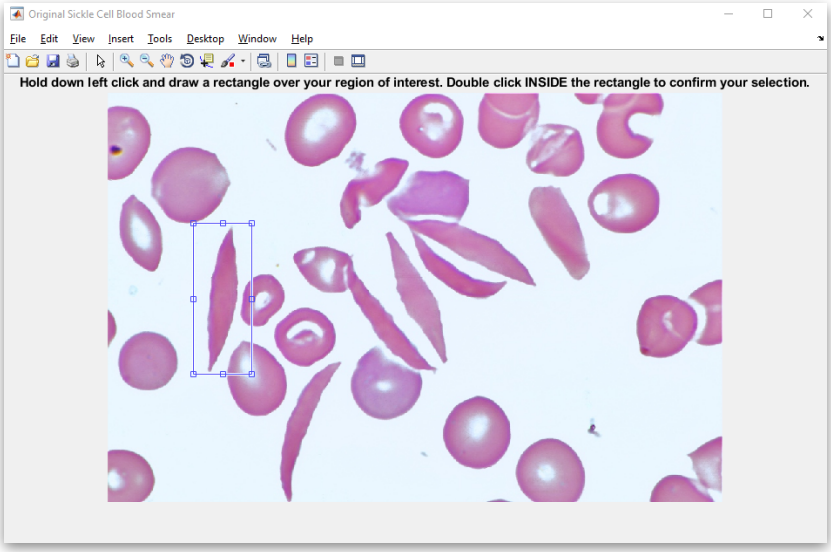
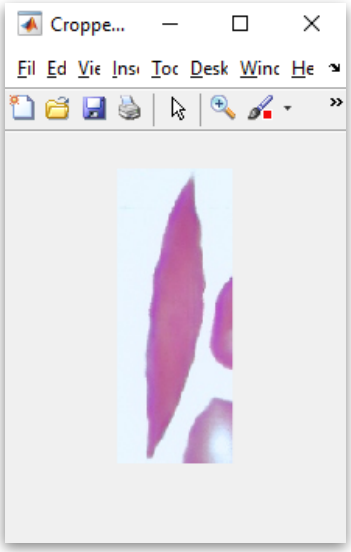
- It allows for selecting of specific regions. Simply click and hold your mouse and highlight the region of interest.
- Both images get displayed for accurate comparisons.

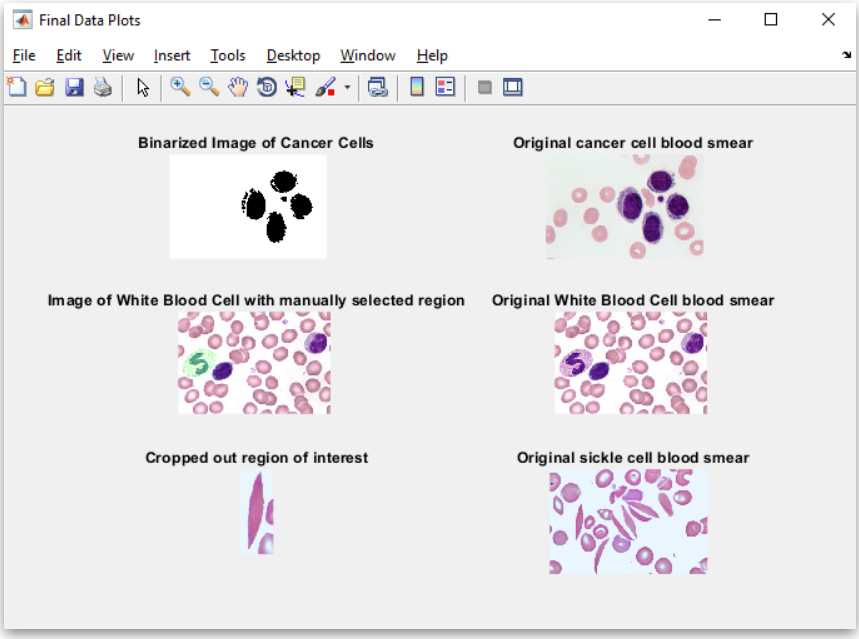






- Further analysis options include being able to create a rectangle over a region of interest, double clicking inside the rectangle to confirm your selection, and viewing the region of interest more intricately in a separate window.

- To conclude, you can view all your progress at the end with the click of a button! All the blood smears analyzed are displayed alongside their original image in a coherent and easy to interpret manner.



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