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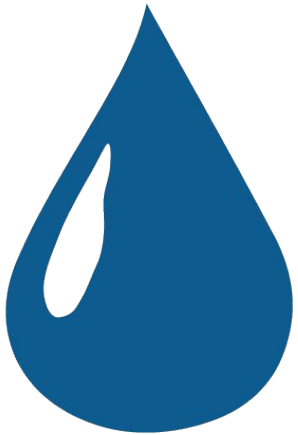

Floc App

This presentation will describe the progress made by the Floc App Team as well as the steps made towards developing the final edition of the software. The team's page on the Agua Clara wiki site provides more extensive information about the team's research.

What do we do?

- Make a program
- Average Size and Count
- Short-term: Help other teams
- Long term: Help Honduras workers

The floc app will be a valuable tool both in the lab and the field.

Methods

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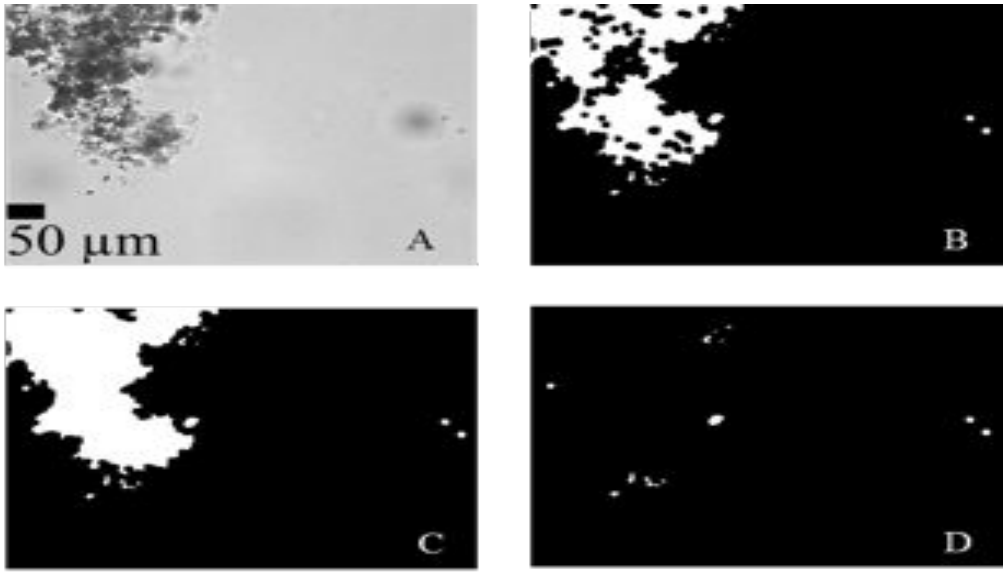
First Step: Research

Sun's Image Analysis



A. Original | B. Local Thresholding | C. Filling | D. Removal

Flocs on the image's border are removed

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Hard to Measure Out of Focus Flocs

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Small particles and unfocused flocs were removed

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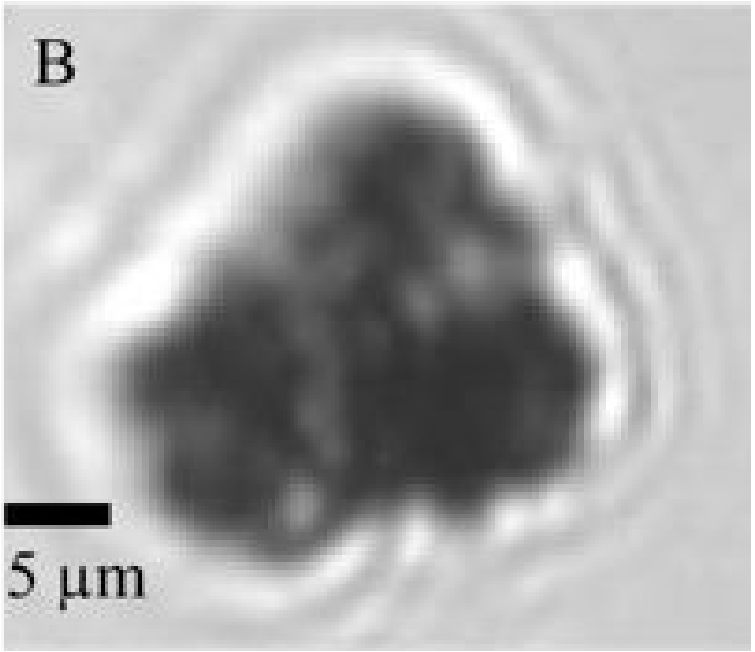

Methods

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Second Step: Splitting up Tasks

Siwei's/Casey's Code

- Takes an image and determines size and count of flocs
- Original code was not user-friendly
- Split it up into subVIs

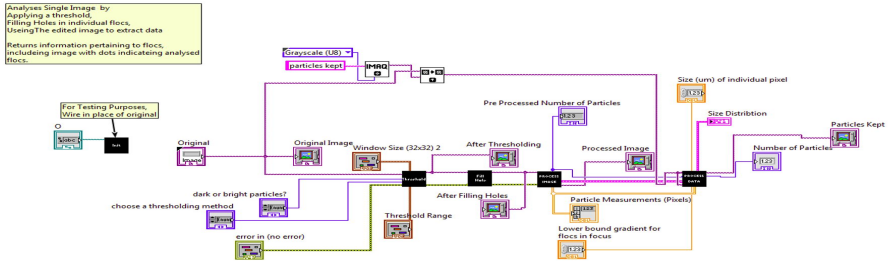

Figure 1: More user-friendly version of the code. Black boxes are subVIs

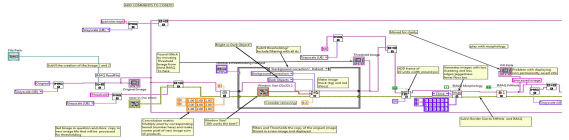

Figure 2: A snapshot of a small segment of Siwei's/Casey's Code.

Their code worked well, but it was made more user-friendly so it could be used by other subteams

Configuration Files Must be Stored in Public Folders

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Executable Draft

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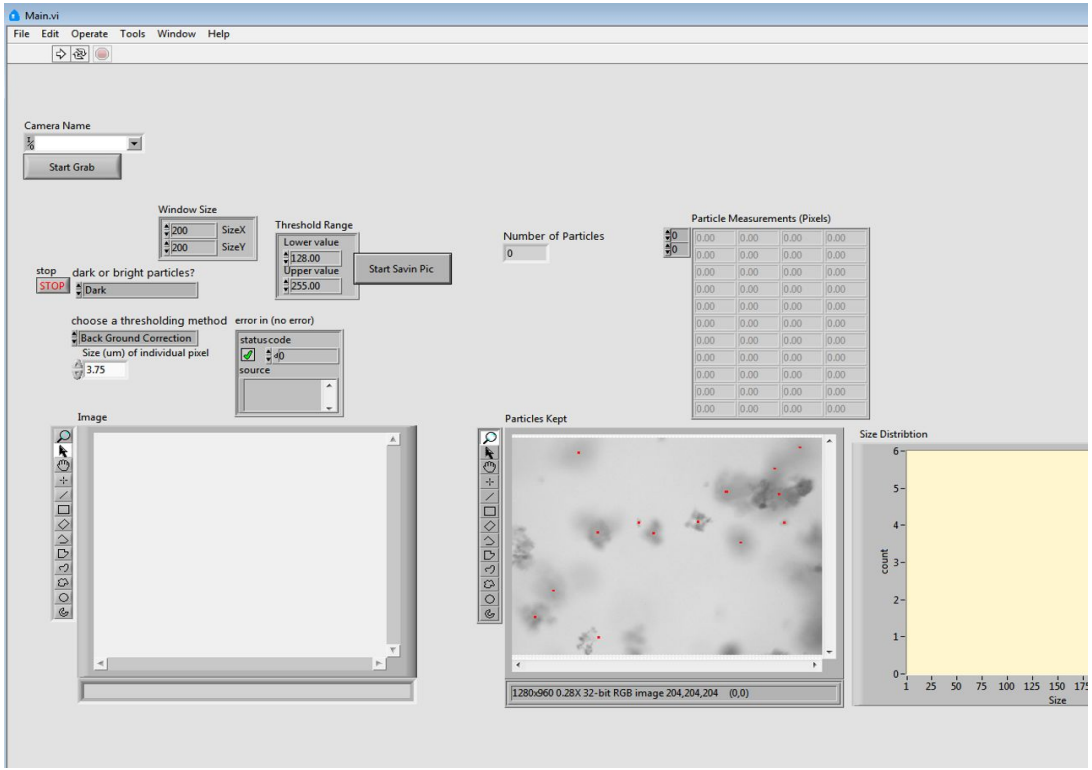
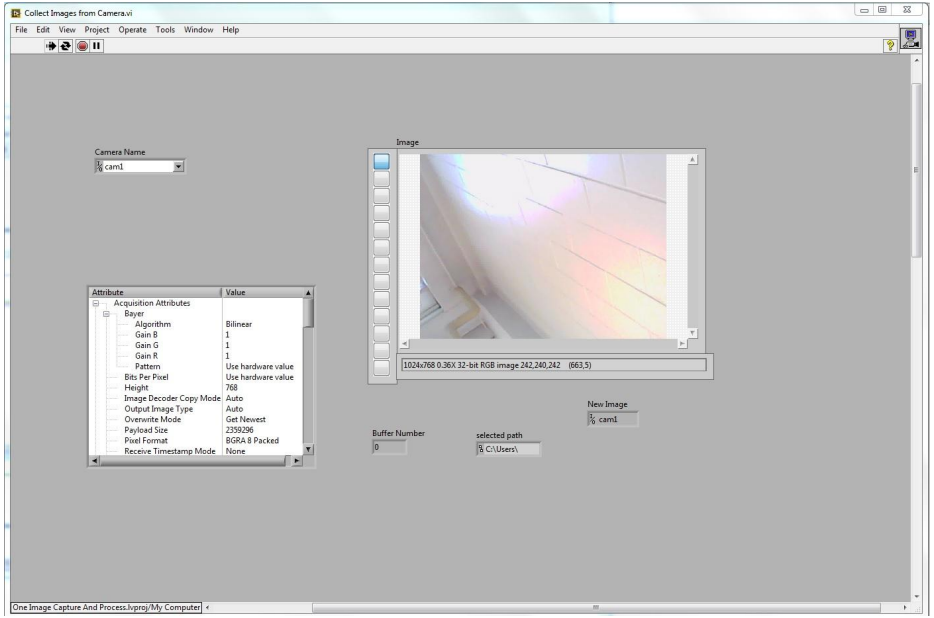


Image Acquisition



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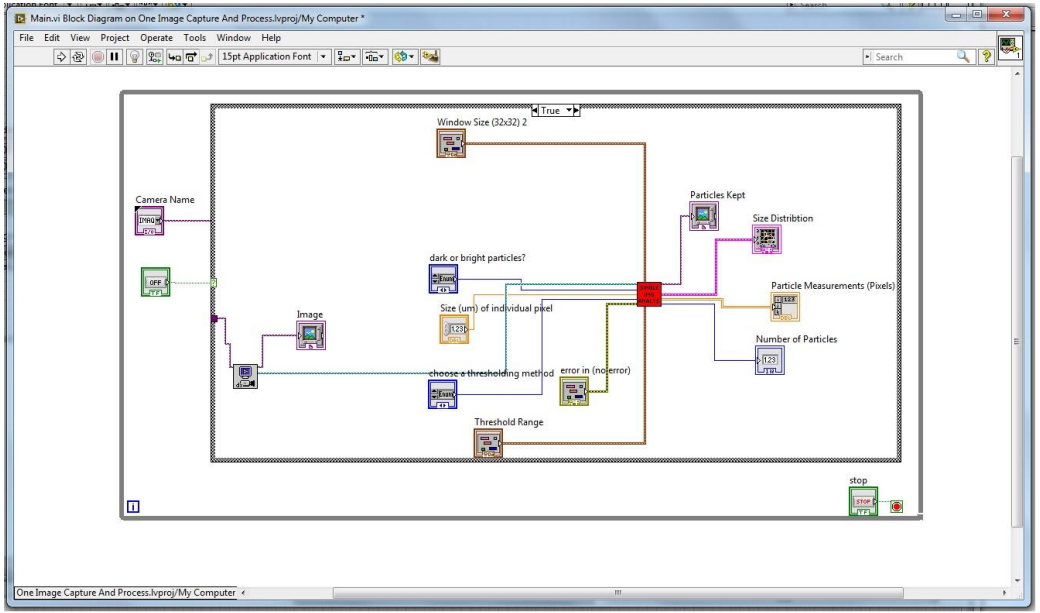
Unfinished Final Product



Conclusions and Future Work

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- Initial difficulty with LabVIEW
- Successful split into subVIs
- Image processing VI was not working.

The image taken from the image acquisition VI was not compatible with the image requirements for the analysis VI, but every other aspect of the VI is functioning properly

Although the final product of the floc app has not been created, we are very close. Next semester, focus will be on the image processing VI and hardware.

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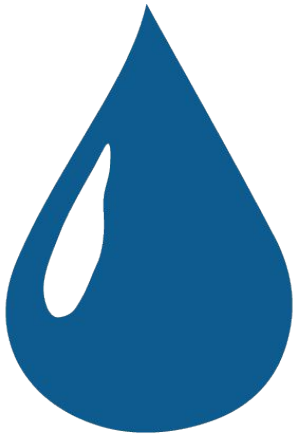
Questions and Recommendations



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Appendix Slides

Gaussian Filter Uses a Weighted Matrix

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$$\frac{1}{273}$$

1	4	7	4	1
4	16	26	16	4
7	26	41	26	7
4	16	26	16	4
1	4	7	4	1

Gaussian Filter Puts Most Weight on Central Pixel

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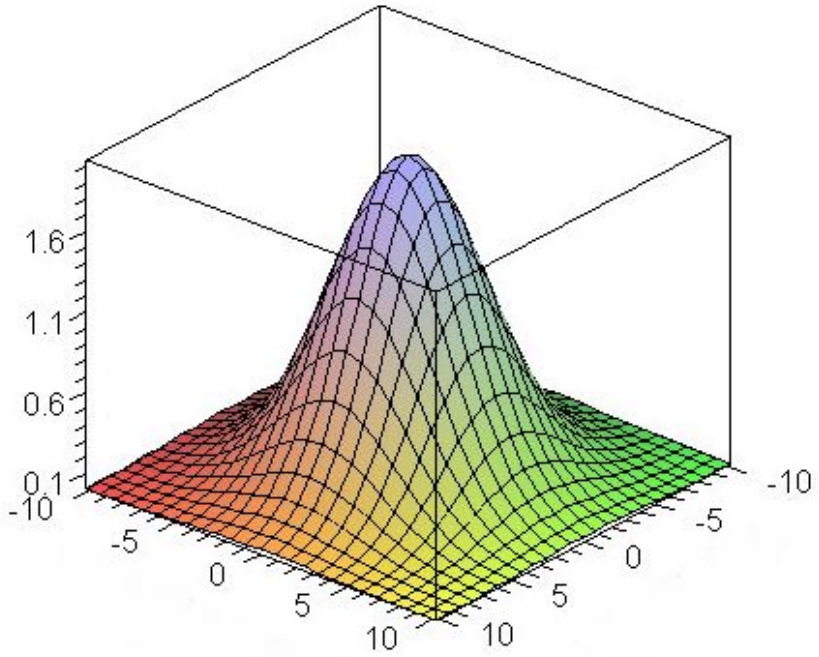

Gaussian Filter Smoothes Edges