



GIAS

Geological Image Analysis Software
How to use it!

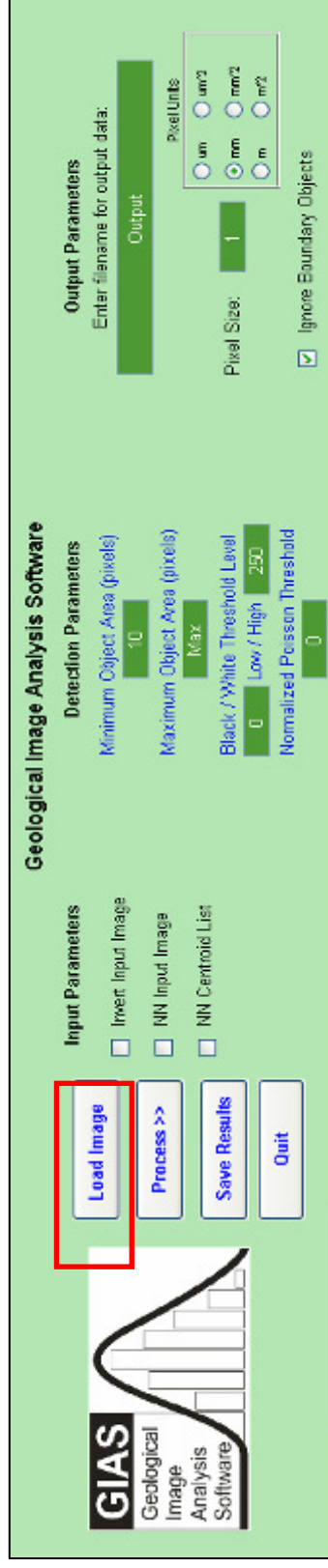
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Running the application

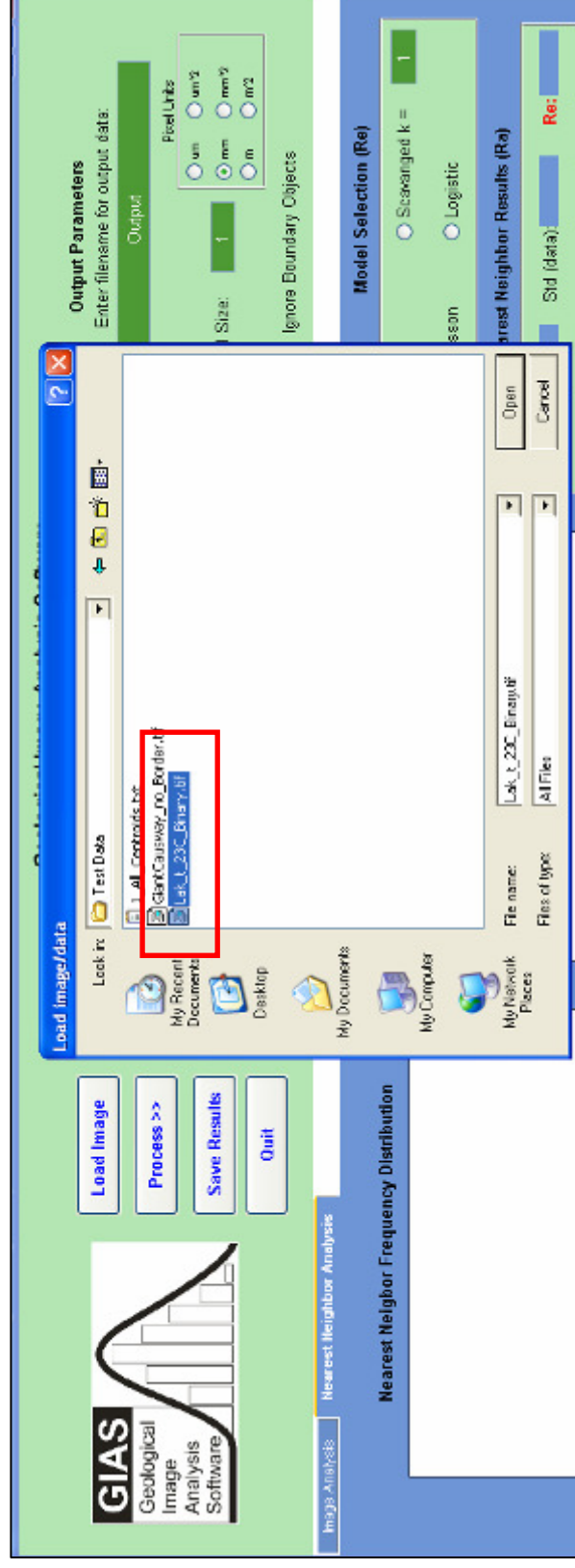
- If you are using the stand alone code (i.e. not running in MATLAB)
 - Double click on 'GIAS_v03.exe'
 - This opens a MS-DOS window initially and then the GIAS GUI window
- In MATLAB
 - Add the GIAS directory to your path (along with the skdata directory)
 - On the command line type: `GIAS_v1`

Opening an image

- Click on the 'Load Image' button

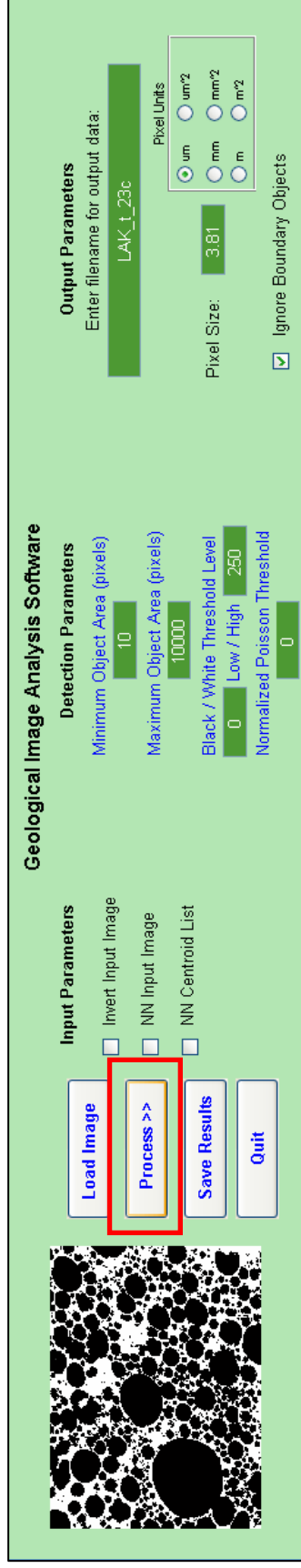


- Select the required image file (tiff, jpeg, png)



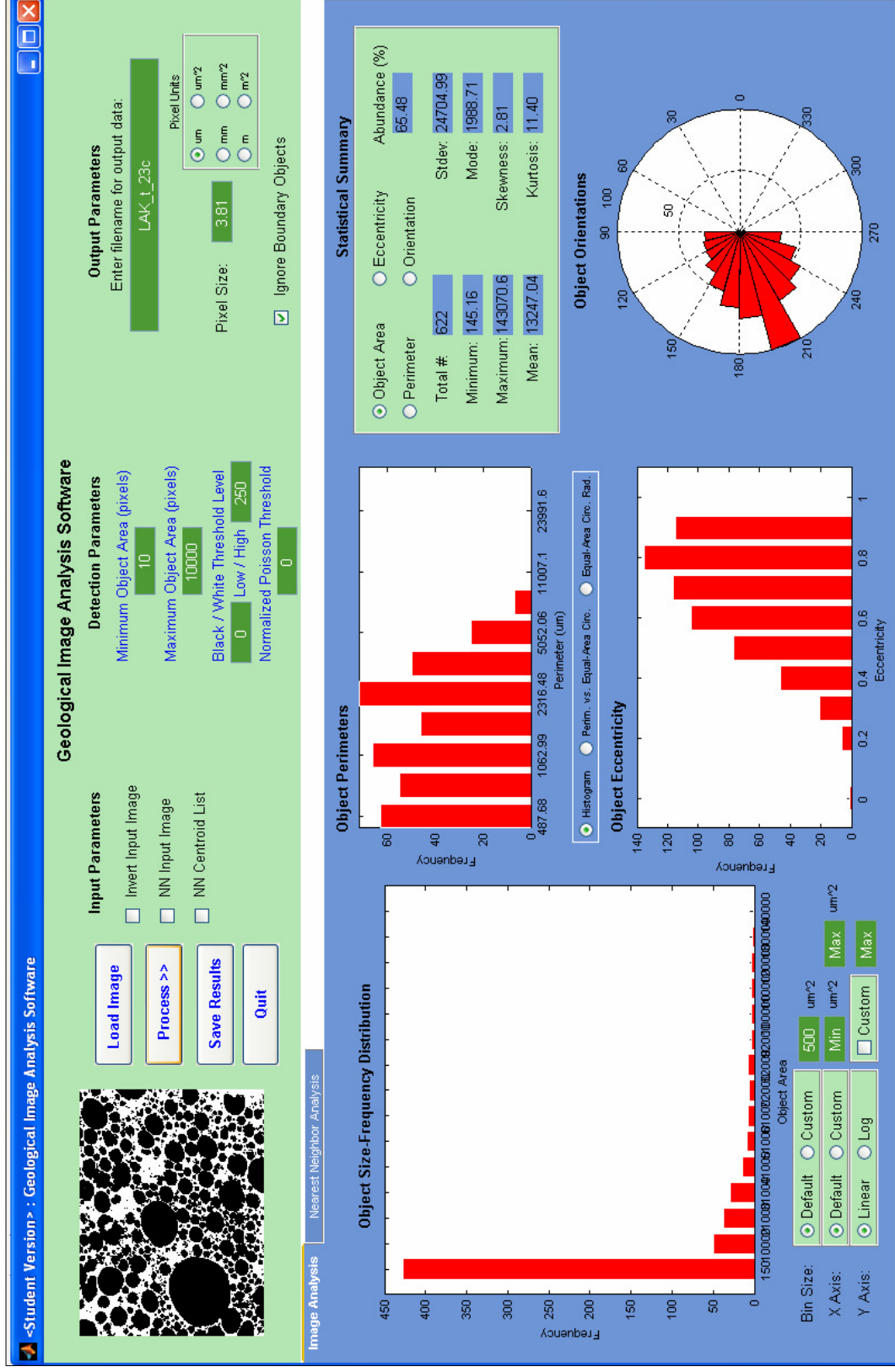
Processing the Image

- Select the relevant detection parameters and output parameters (e.g. pixel size)
- See the Help files for information on the options
- Click on the ‘Process’ button



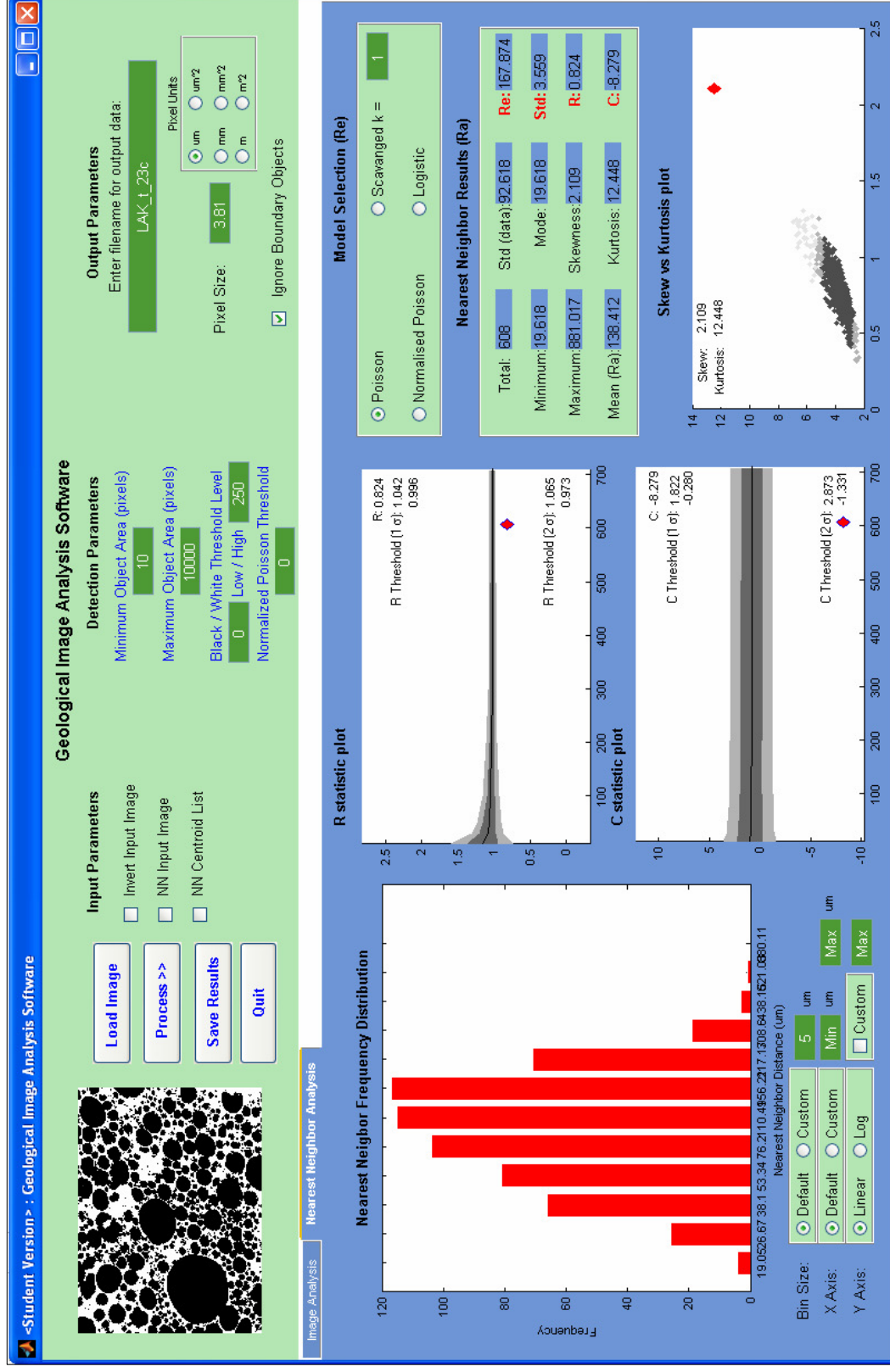
- It takes approximately 15 seconds to process test image LAK_t_23c

- These are the results for the Image Analysis



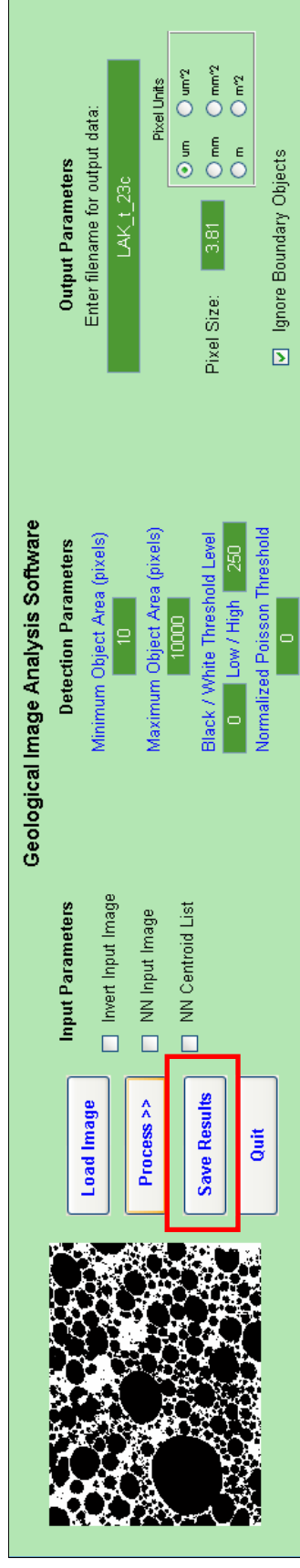
Results: Nearest Neighbor Tab

- These are the results for the Nearest Neighbor



Saving output

- You can save all the graph calculations using the 'Save Results' button



- This writes an Excel-readable tab-delimited file named from the output filename box: LAK_t_23c

Results in Excel

- You results are written to two separate files in the local working directory
- One is for *image analysis* statistics, the other for *nearest neighbor* statistics

The screenshot displays two windows. The top window is a file explorer showing the contents of 'D:\ImageProcessing\GIAsv1.0\Test Data'. It lists several files, including 'LAK_t_23C_Binary.tif', 'LAK_t_23cImageAnalysisStats.txt', and 'LAK_t_23cNearestNeighborStats.txt', which are highlighted with a red box. The bottom window is a Microsoft Excel spreadsheet titled 'Microsoft Excel - LAK_t_23cImageAnalysisStats.txt'. The spreadsheet contains a table with 23 rows and 14 columns, detailing various image analysis statistics.

	A	B	C	D	E	F	G	H
1	Geological Image Analysis Software (GIA)							
2	Image Analysis (IA) Results							
3								
4	Input Image Name:	LAK_t_23C_Binary.tif						
5	Date of Analysis:	20-Feb-2003						
6	Percentage Vesicles	65.485						
7	Minimum Object Area:	1.48E-02 um^2						
8	Maximum Object Area:	145161 um^2						
9	Lower BVV Threshold:	0 DN						
10	Upper BVV Threshold:	250 DN						
11	Pixel Size:	3.81E-00 um						
12	Ignore Boundary Bubbles:	Yes						
13								
14	Statistical Summary							
15								
16	Total Number of Objects	622						
17								
18	Object Area	Minimum	Maximum	Mean	Standard Deviation (1 sigma)	Mode	Skewness	Kurtosis
19	Radius	1784124	8956	912.575563	1701302321	10	2.808289	11.404798
20	Perimeters	8.829427	55.01263	11351244	12.160994	1784124	1505965	4.646957
21	Eccentricity	0	640.440632	103.392376	116.764123	11656854	1773685	6.1232
22	Orientations	-89.316765	0.973644	0.725763	0.171793	0.50579	-0.609472	2.773793
23	Detailed Results							
24								
25								
26	Object Identification Number	Centroid x Coordinate	Centroid y Coordinate	Area	Eq. Area Circle Radius	Perimeter	Eccentricity	Orientation
27	1	212375	363425	4645.82	38.45254	396.174301	0.756123	57.438051
28	2	31960754	231142857	9246.7557	54.2525	452.670608	0.443426	44.04431
29	3	4331218	493.243521	38090.2464	110.11136	796.42337	0.624395	0.187851
30	4	24.333333	421.74286	1219.3524	19.701064	130.08537	0.847682	63.87415
31	5	29	460.789474	275.8059	9.363725	70.428922	0.95319	25.571359

Other options

- See the Help files for advice on how the other options work
- If the code stops working, the best thing to do is to close the programme and restart it
- If it is persistently crashing, check the image format is correct and that you have set the path in Matlab correctly.
- If all else fails, contact us via the www.geoanalysis.org website