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Probability and Statistics

Plot Salt Smooth Program Documentation

For the first run through of the Plotting, Salting, and Smoothing, I had my own java program evaluate the coordinates from x range (0-50) for . I chose this function simply because f(x) has critical points at (0,0) and (0,50). This makes it easier to tell how far off the smoothing is after salting the function.

Next, I had my program salt the y-values and export that to a new csv file. The salter works by looping through the initial y-values, generating a salt value between 1 and 10. If the salt value is positive, I add it to the y-value, and if even, I subtract. The results of my own salter are below:

Finally, I had my program smooth the salted values and printed the results. Using this algorithm, I did not get exactly what I expected back. It seems my function shifted up ~15-20 units in the y direction. :

This result resembles our original function, but it’s not exactly right. From this we can conclude that the smoother functions properly, however it is not extremely precise as there are several visible variations from our original data.