

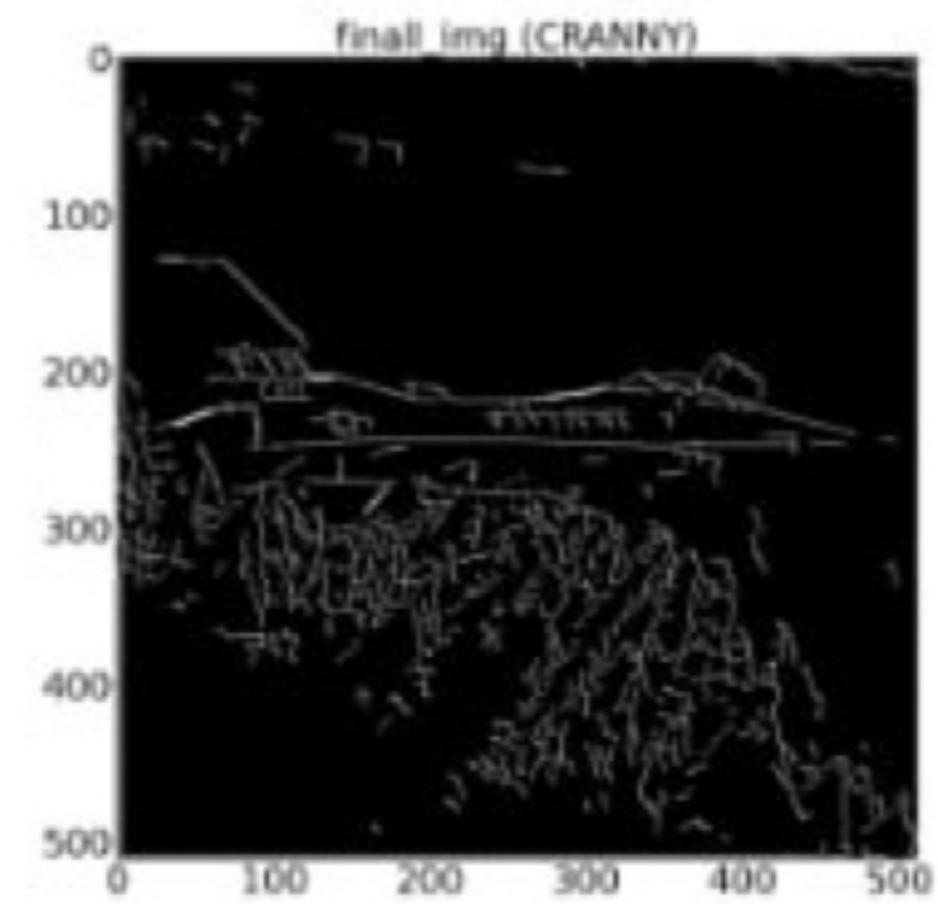
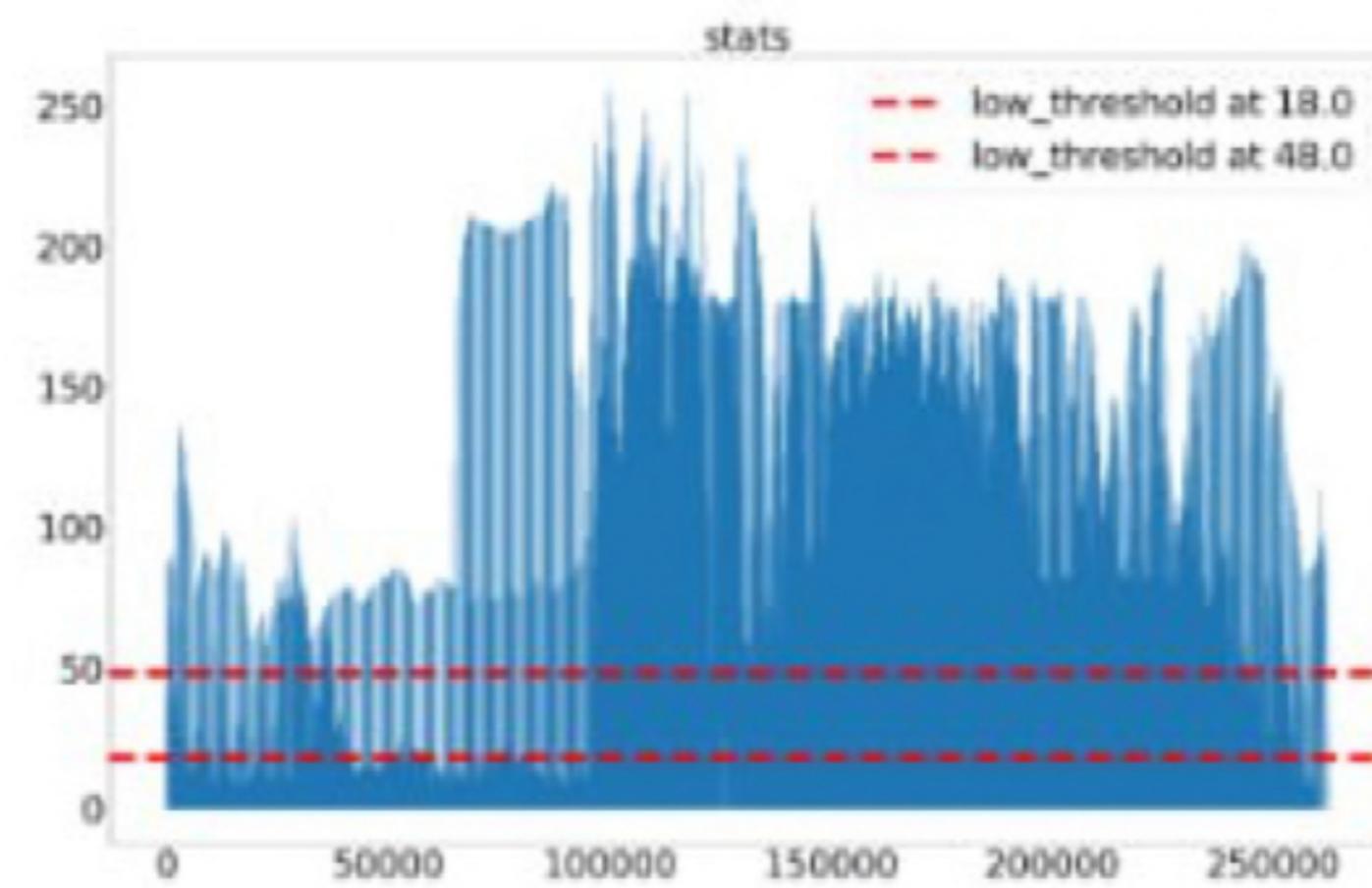
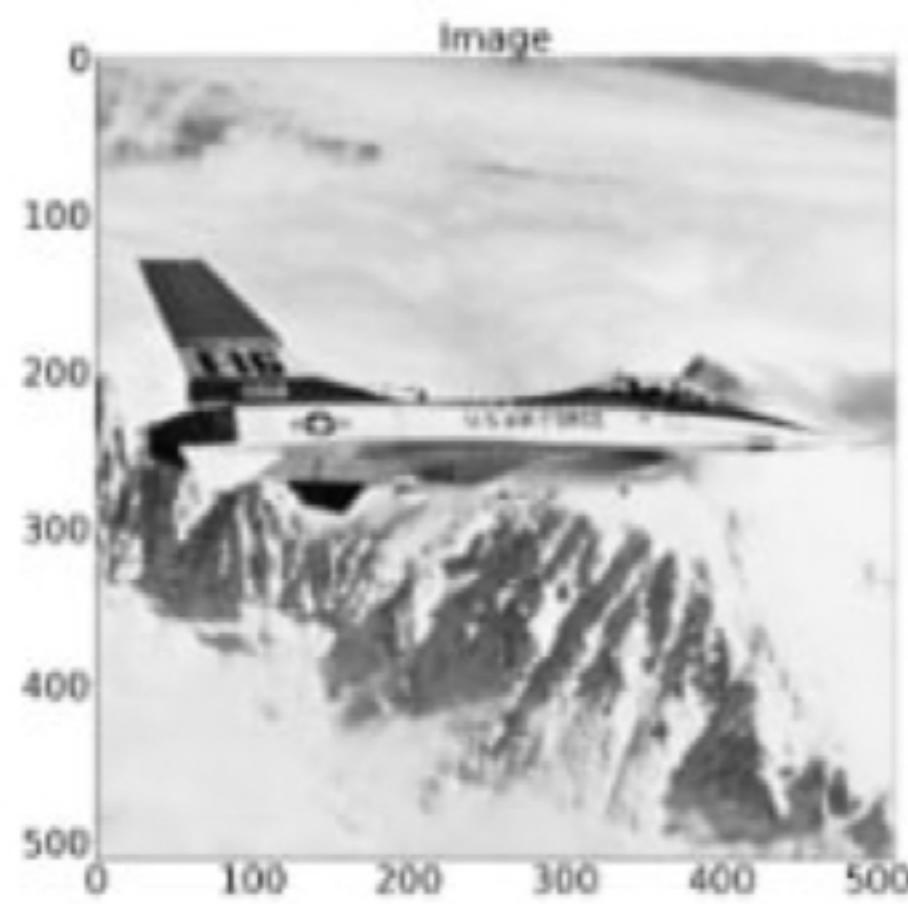
4-202163

15 images

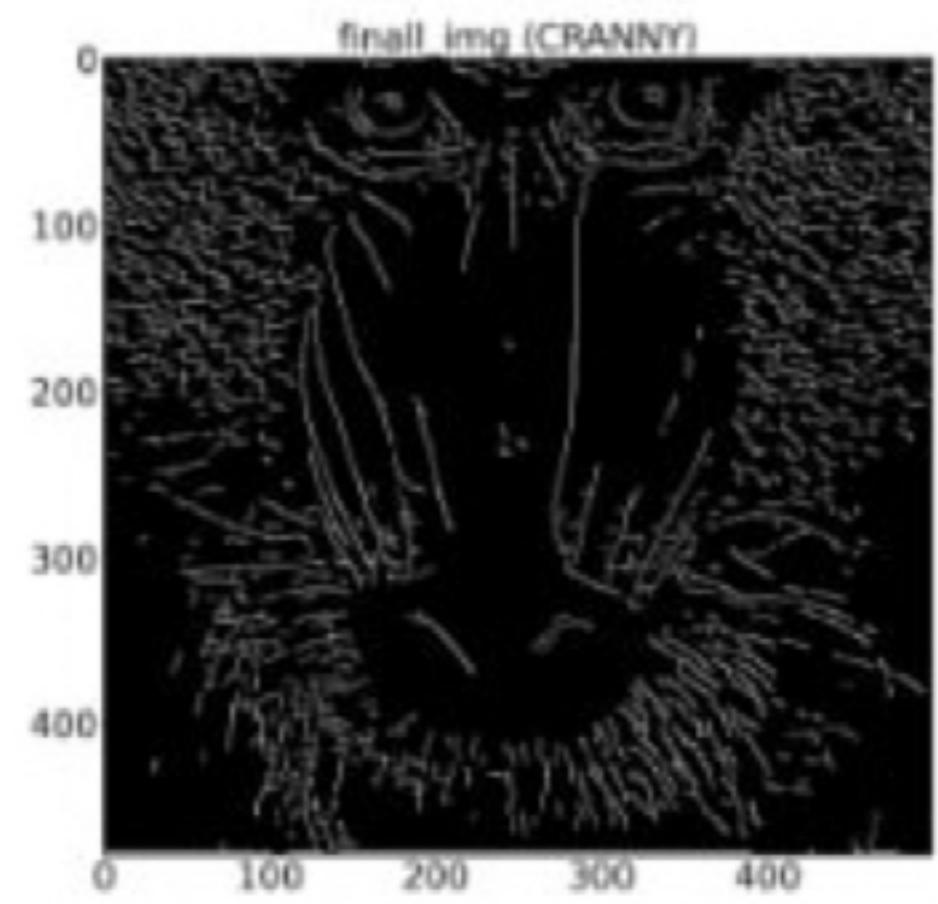
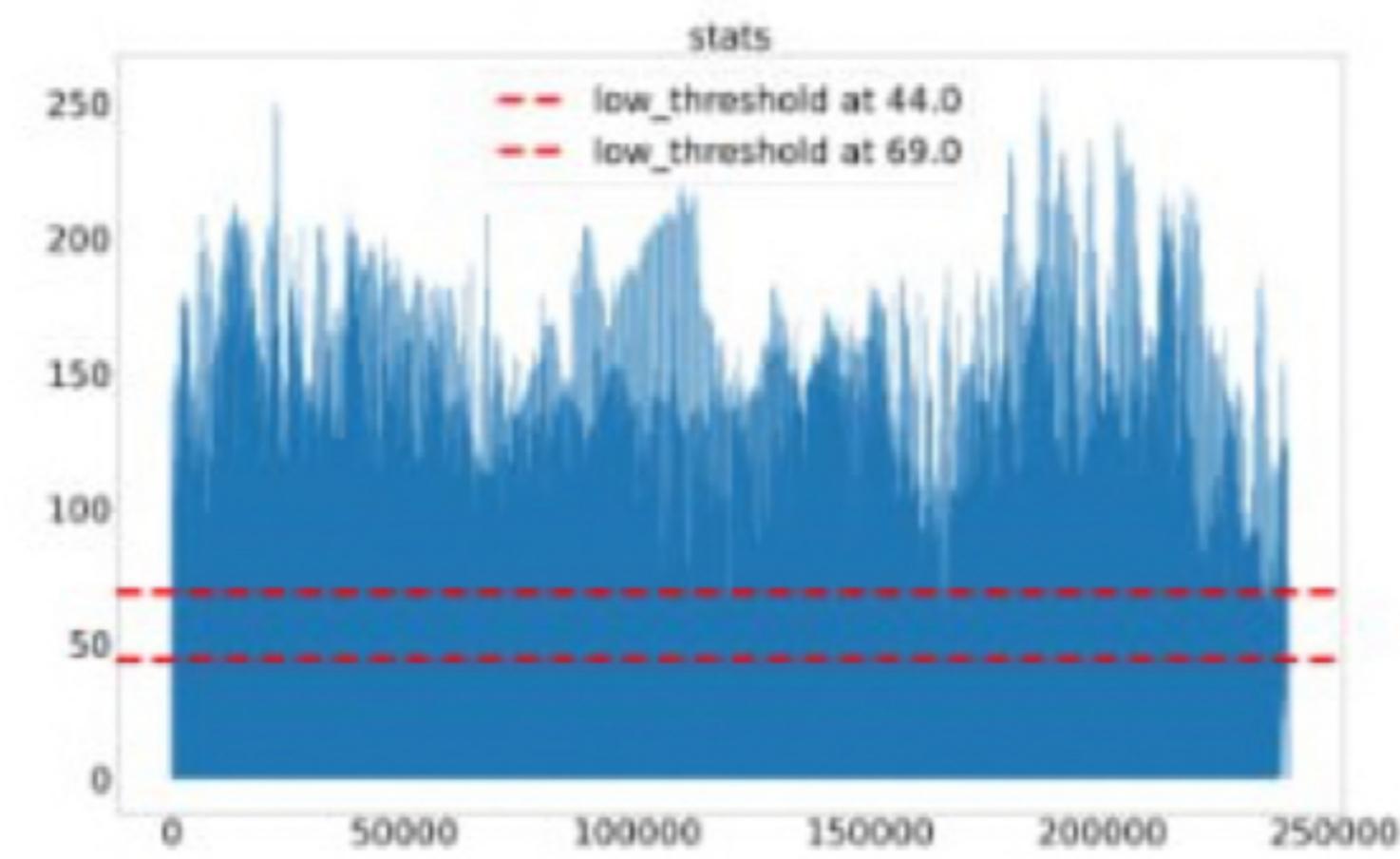
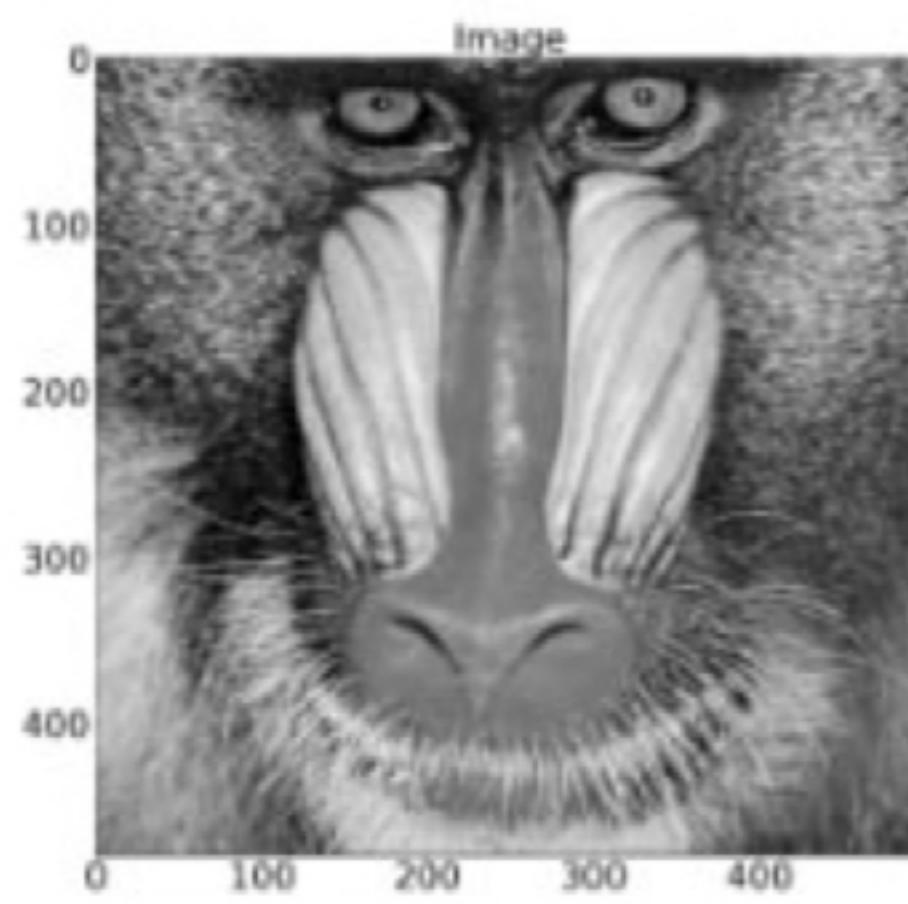
- 4 crnt

①

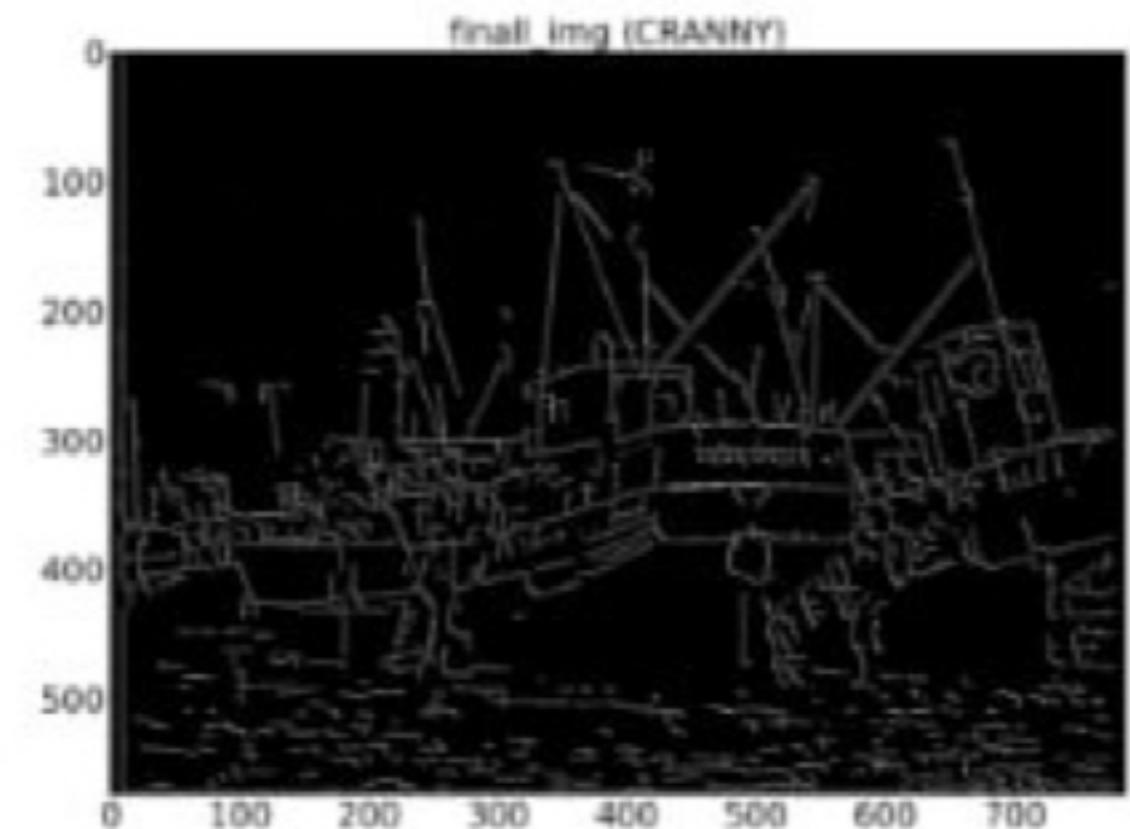
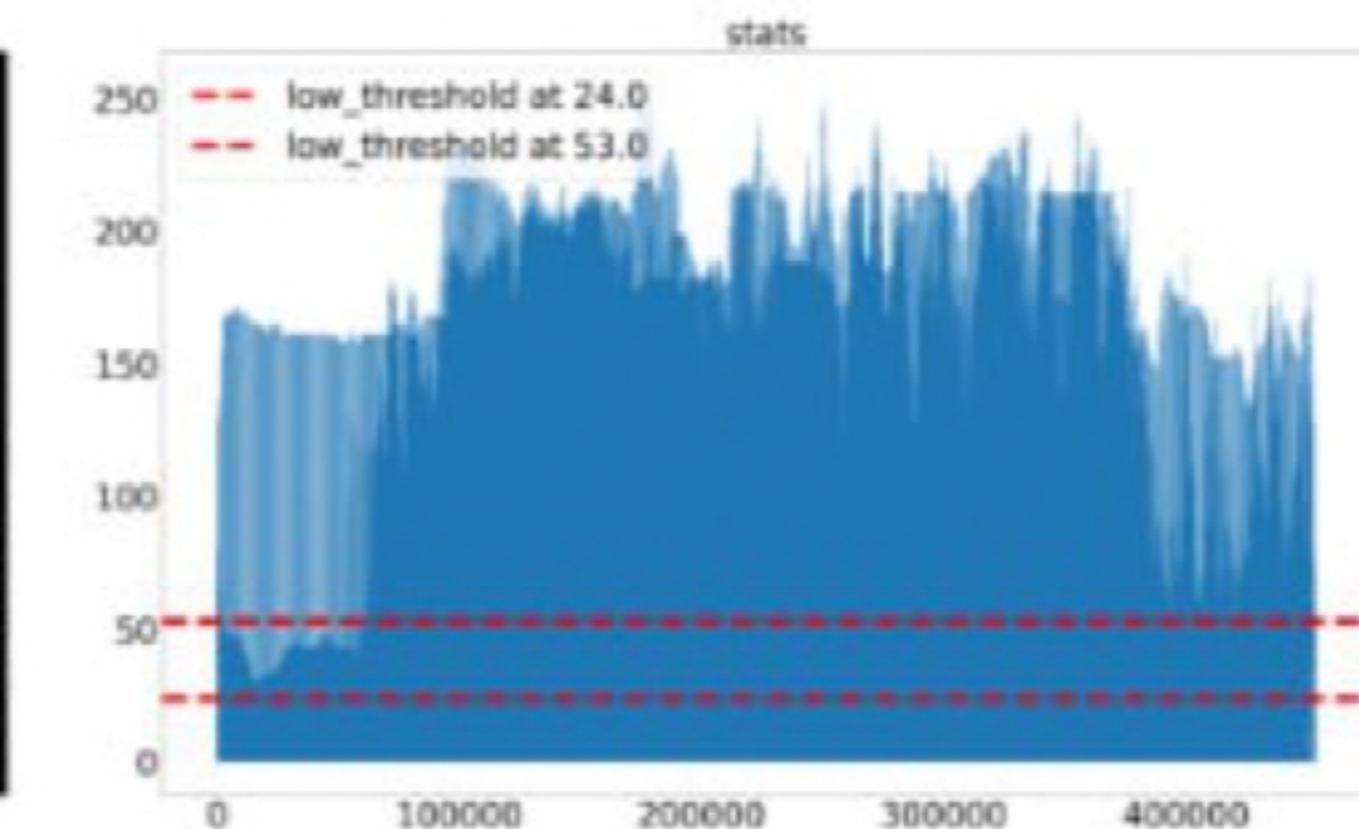
quantile\_0.8: 18.0  
quantile\_0.9: 48.0



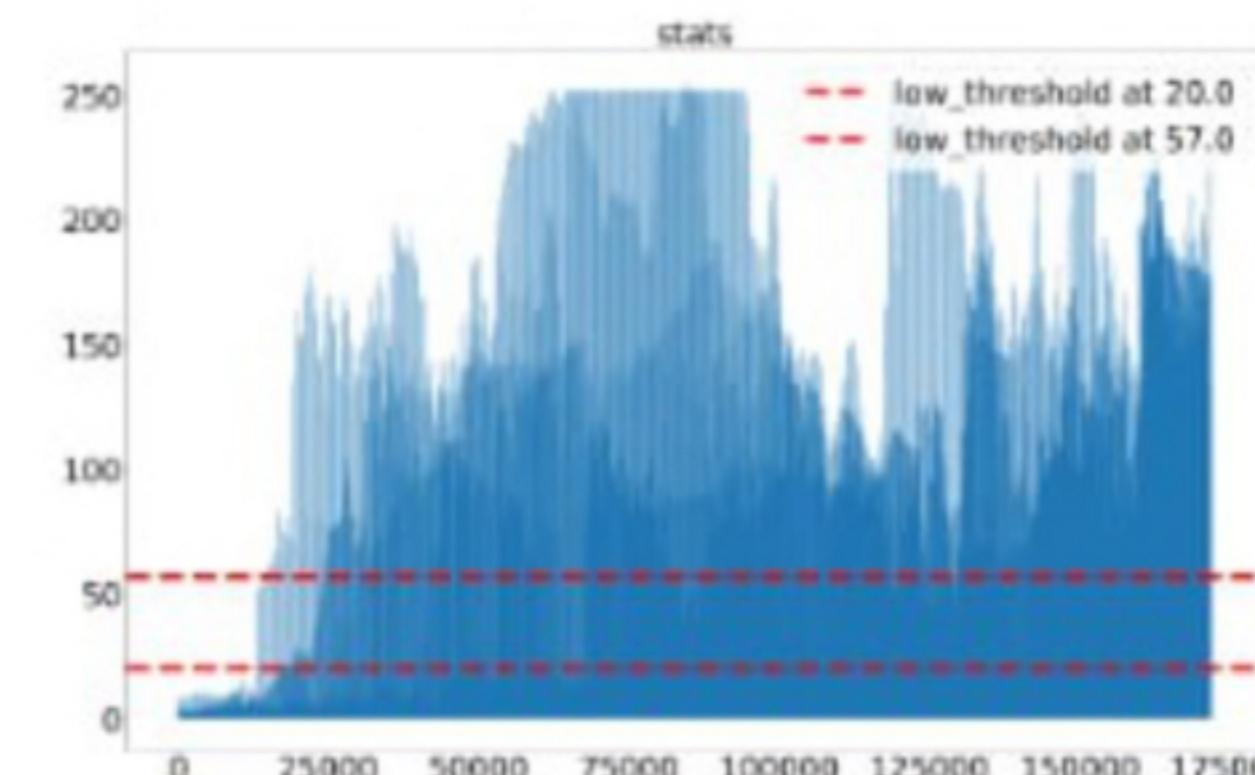
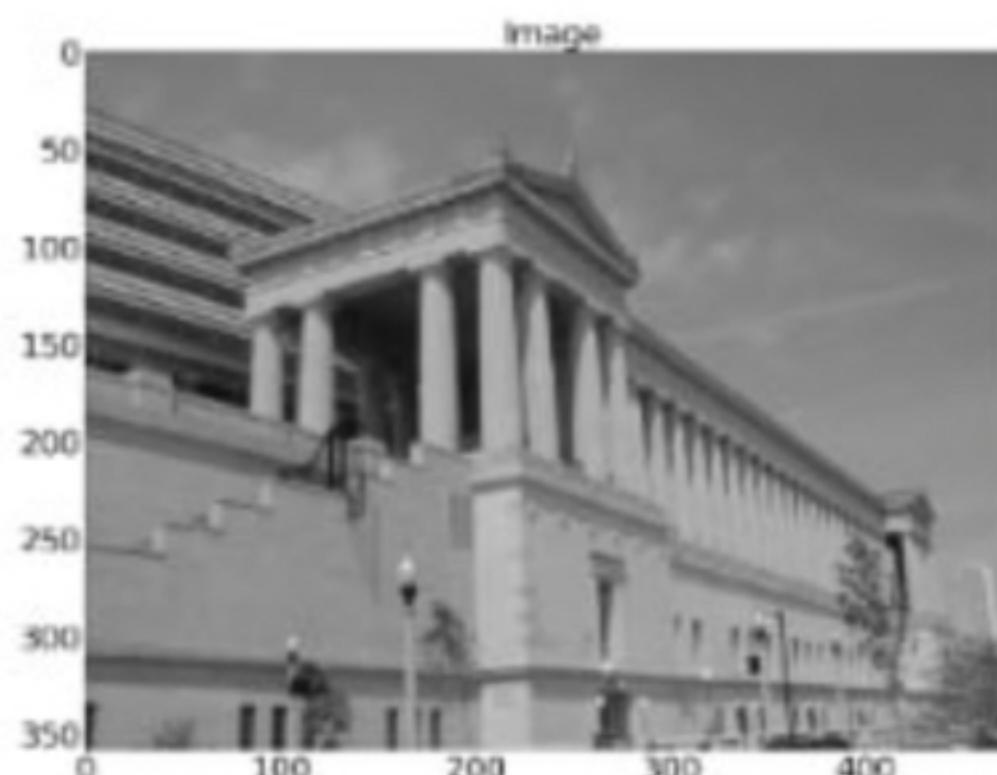
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quantile\_0.9: 69.0



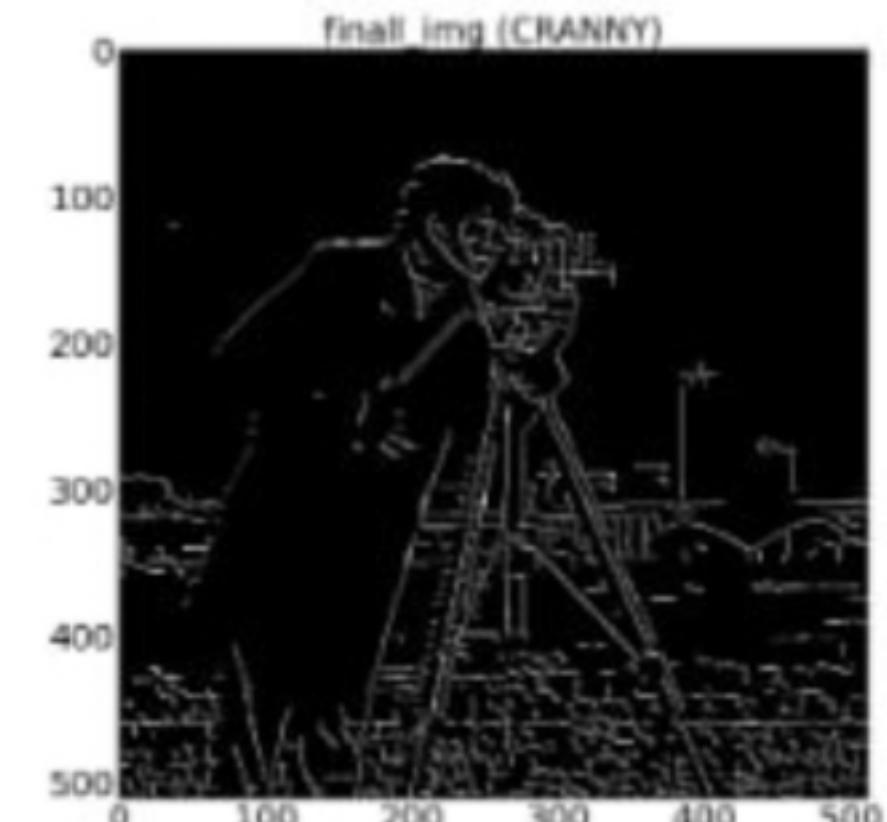
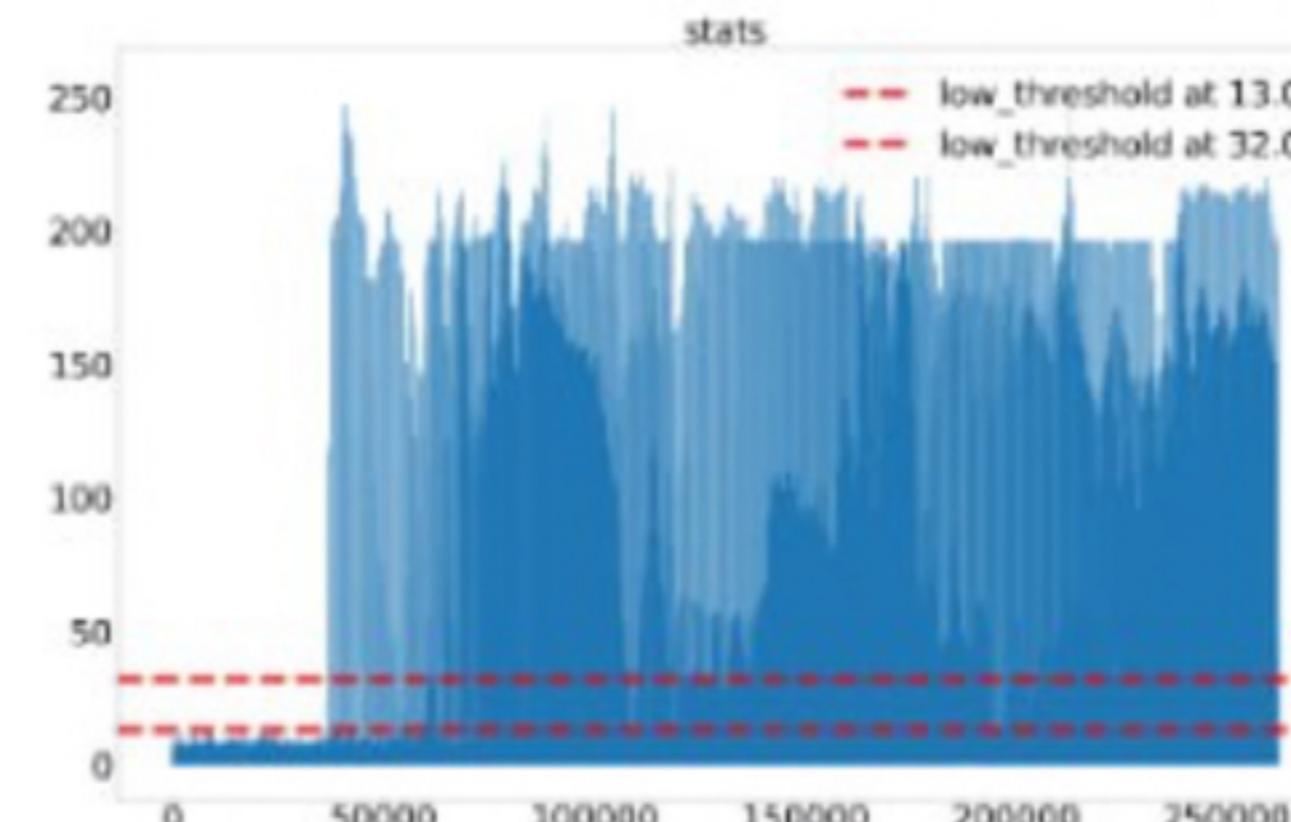
quantile\_0.8: 24.0  
quantile\_0.9: 53.0



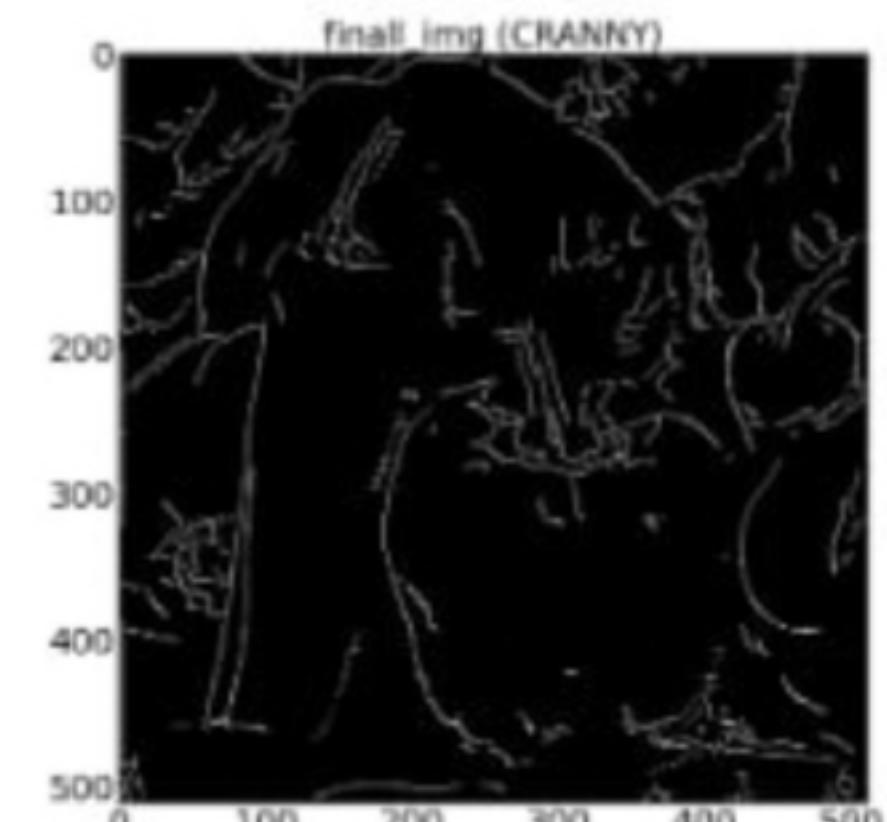
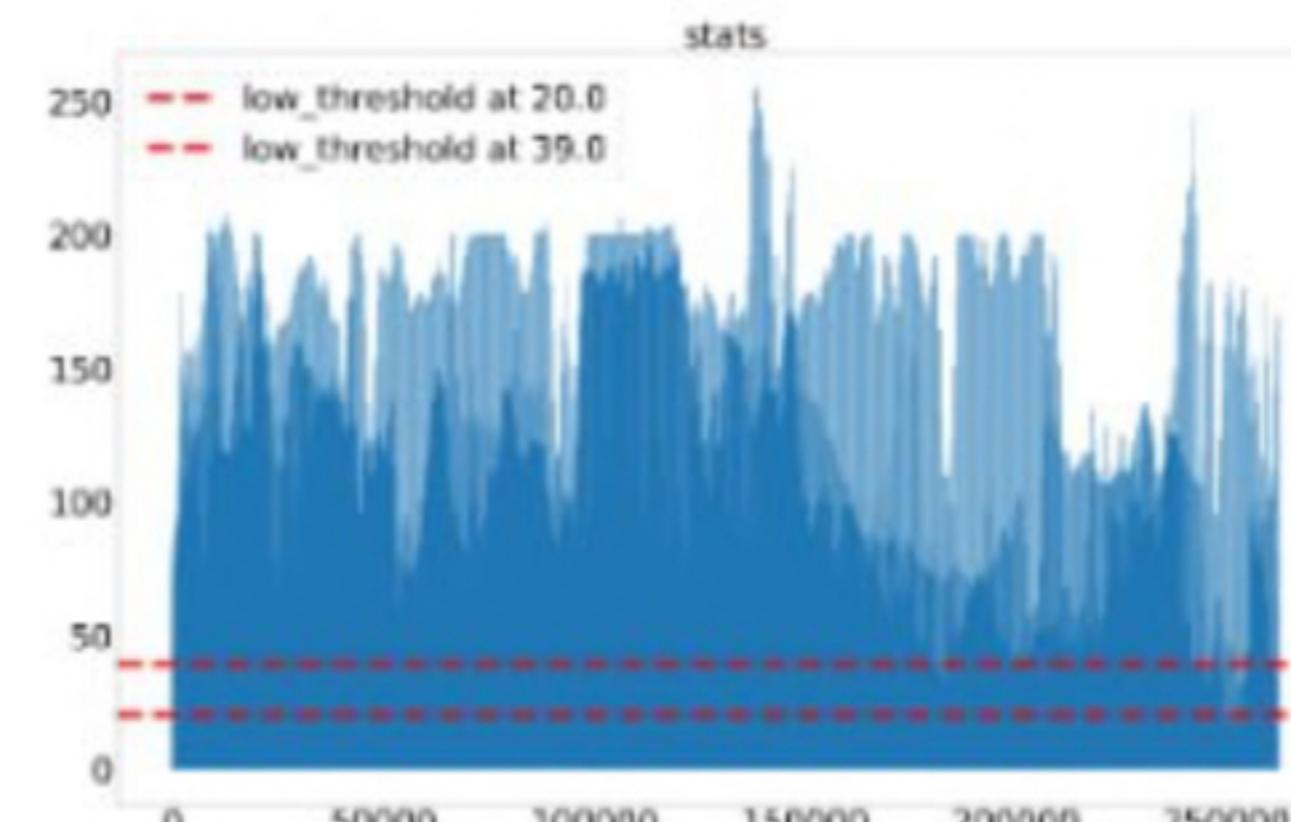
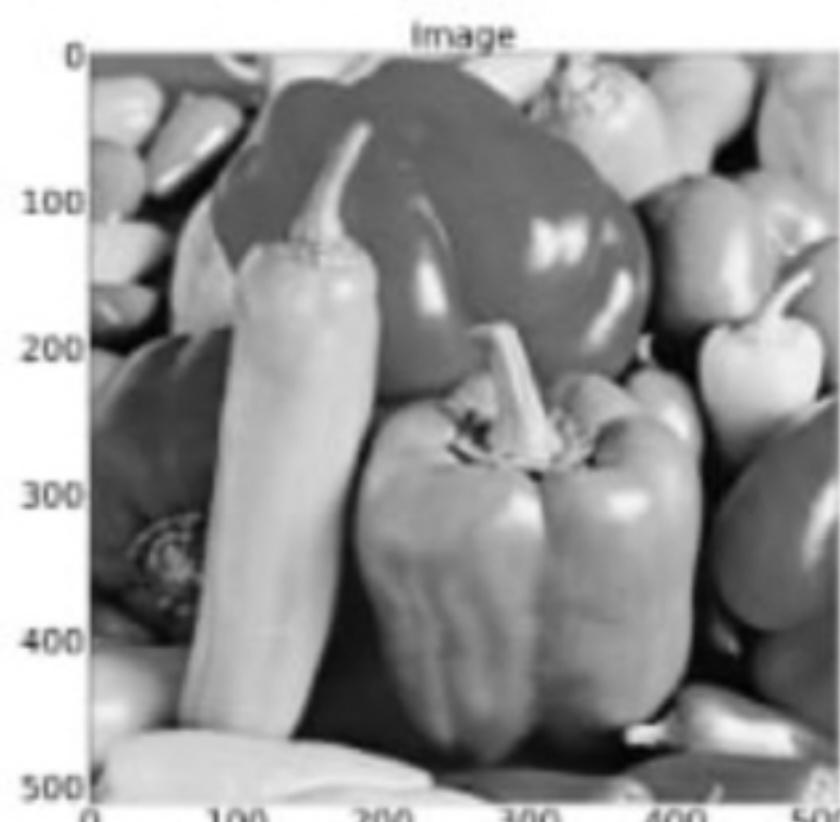
quantile\_0.8: 20.0  
quantile\_0.9: 57.0



quantile\_0.8: 13.0  
quantile\_0.9: 32.0

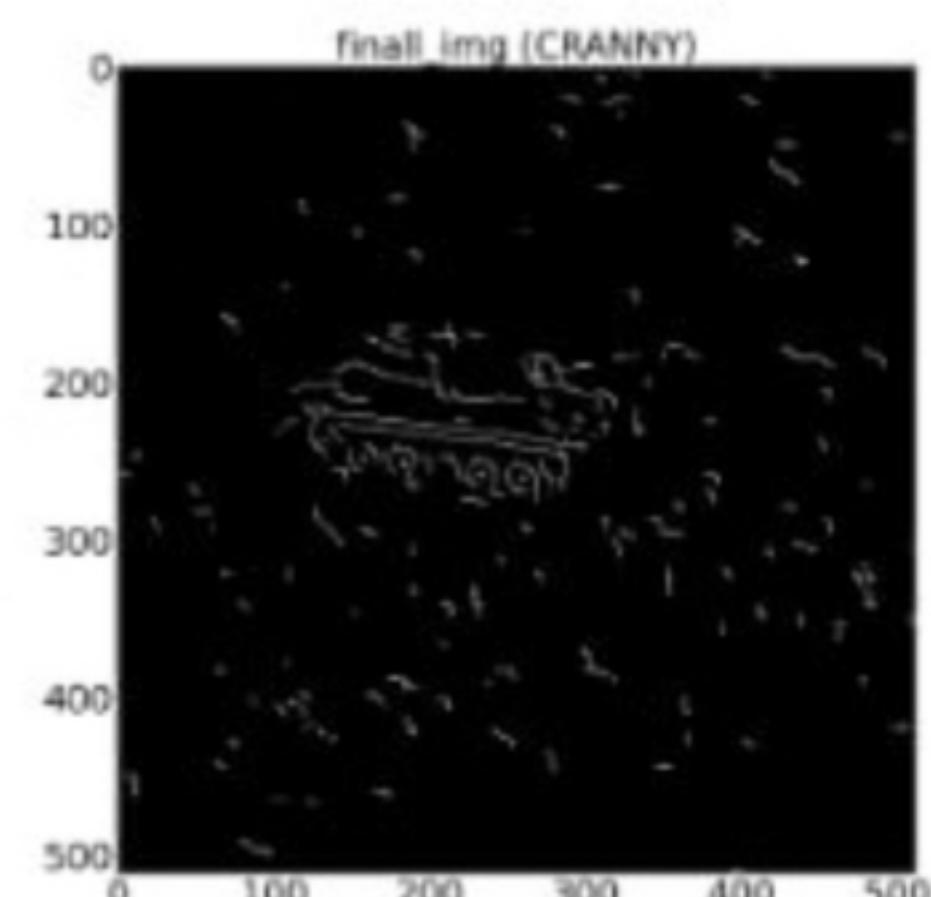
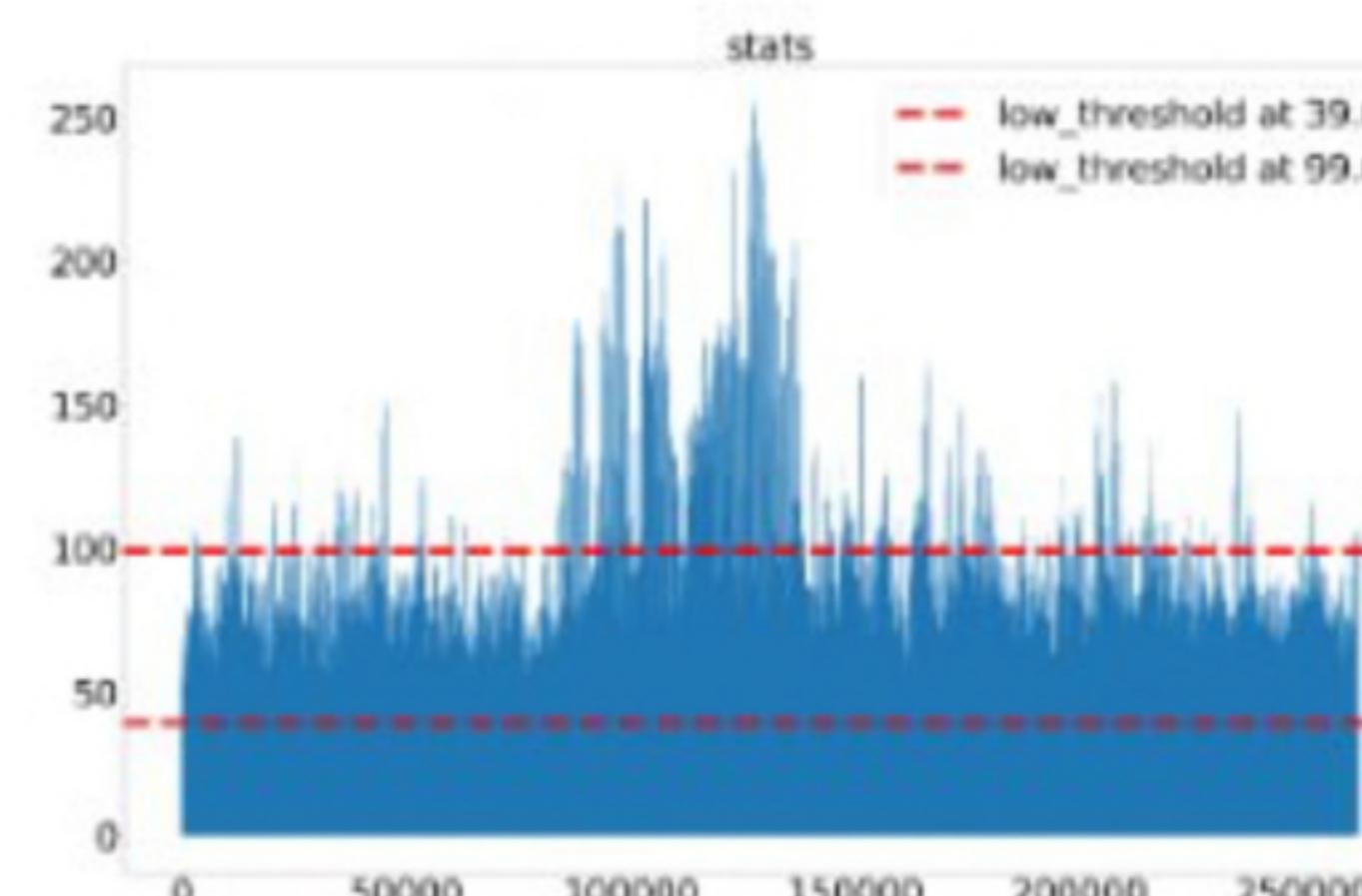
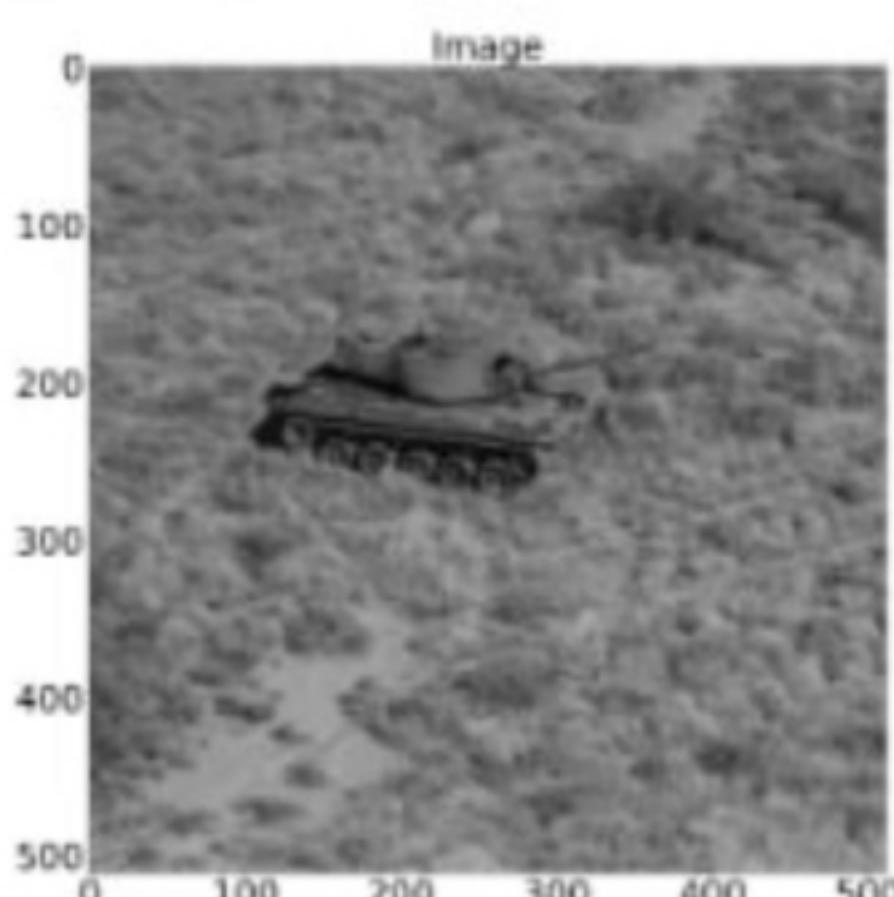


quantile\_0.8: 20.0  
quantile\_0.9: 39.0

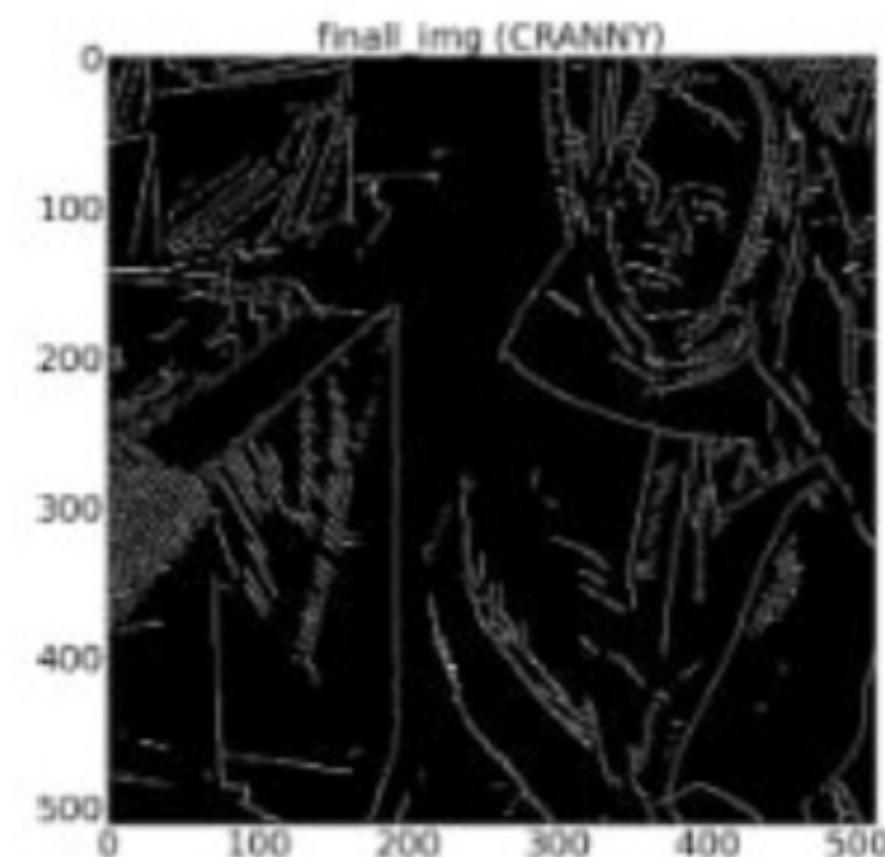
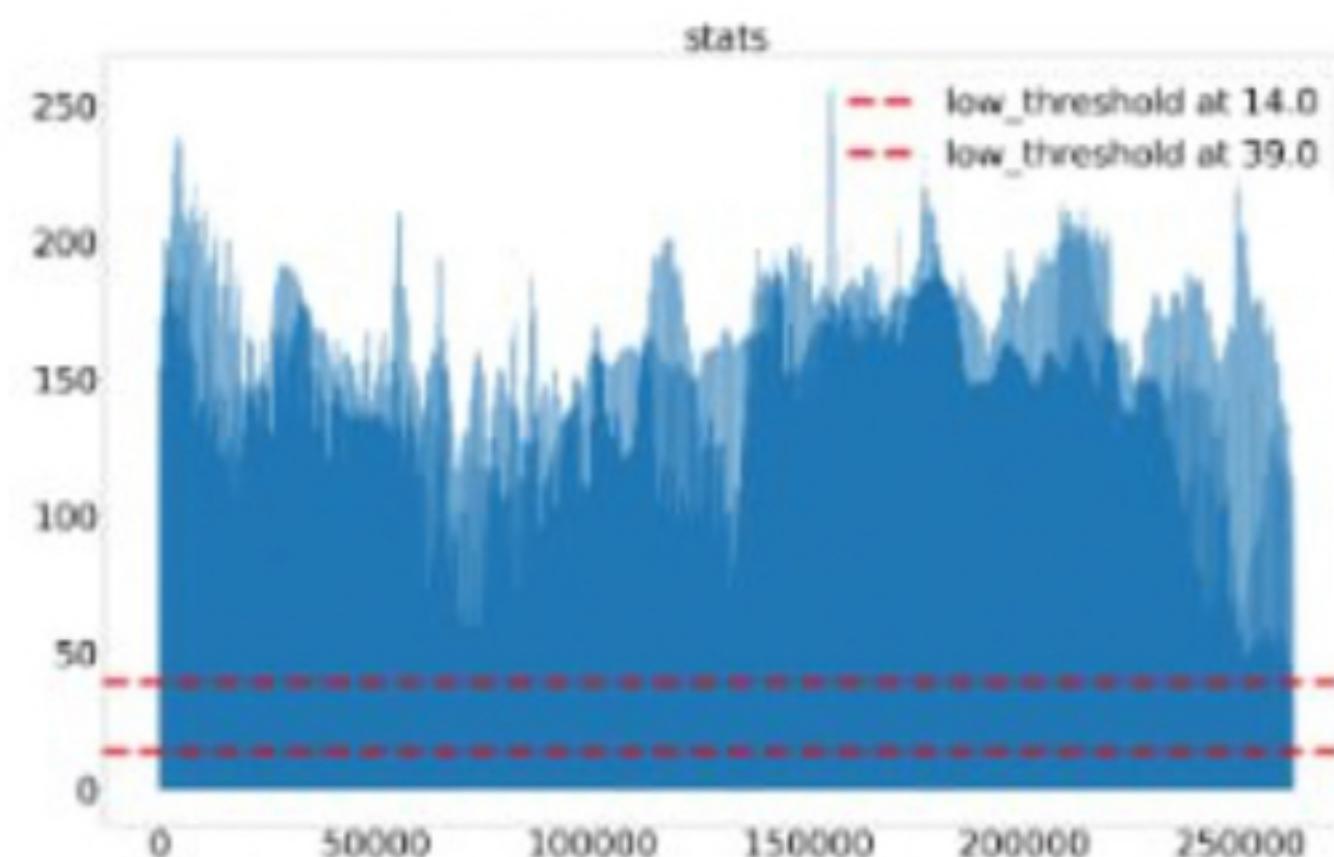
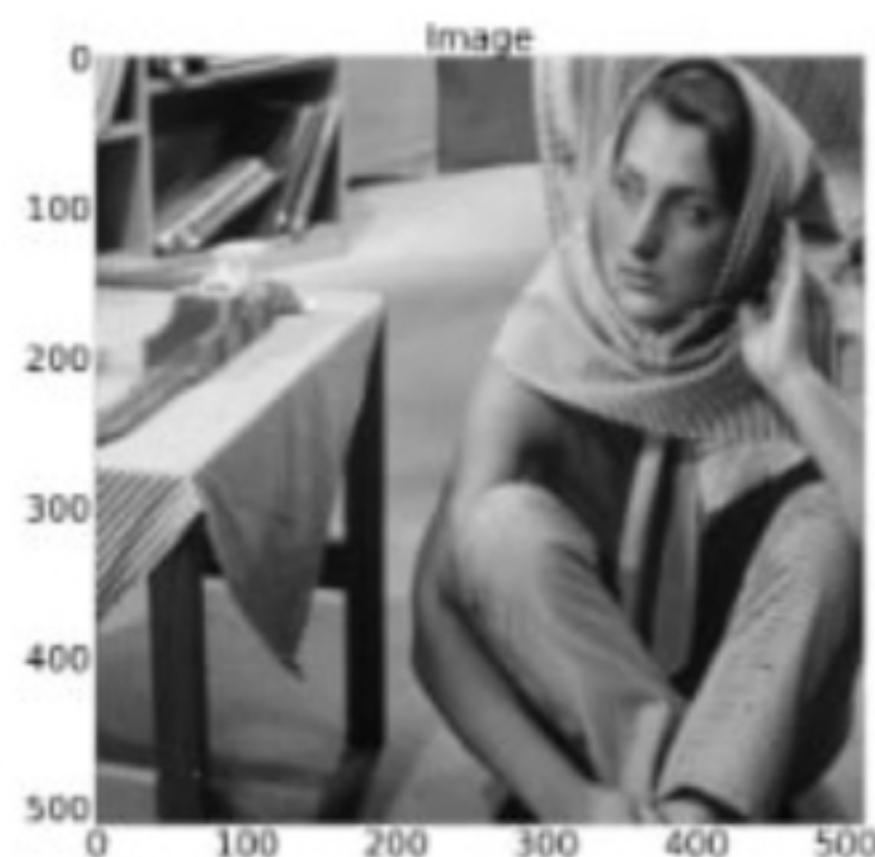


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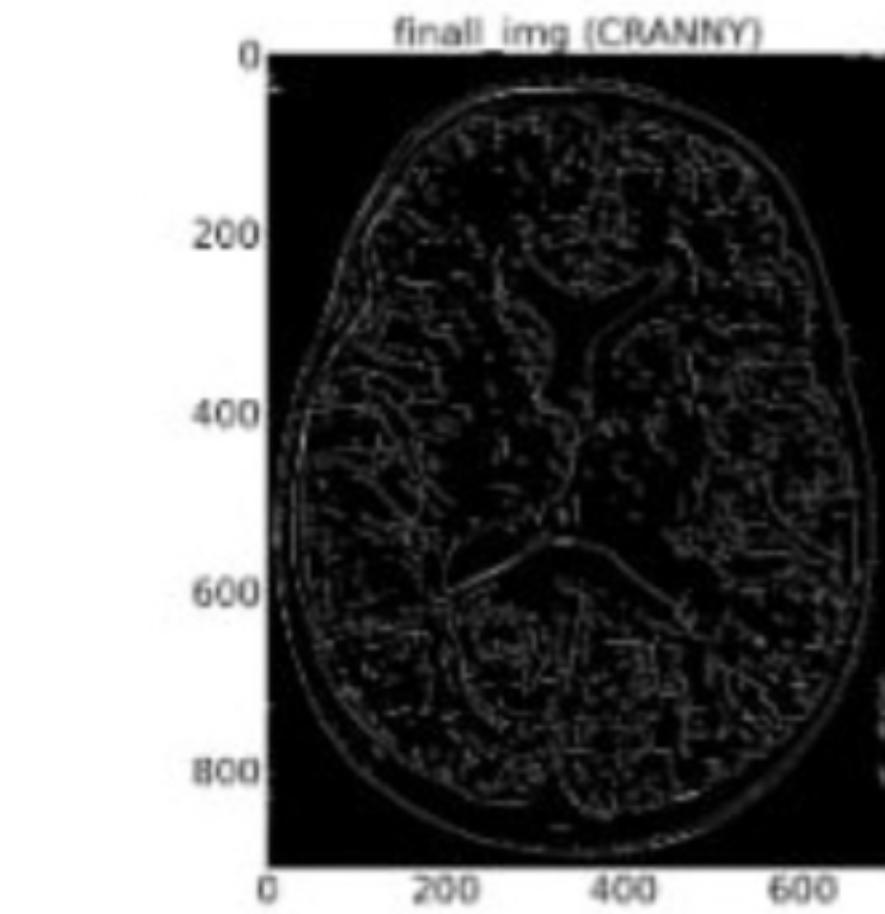
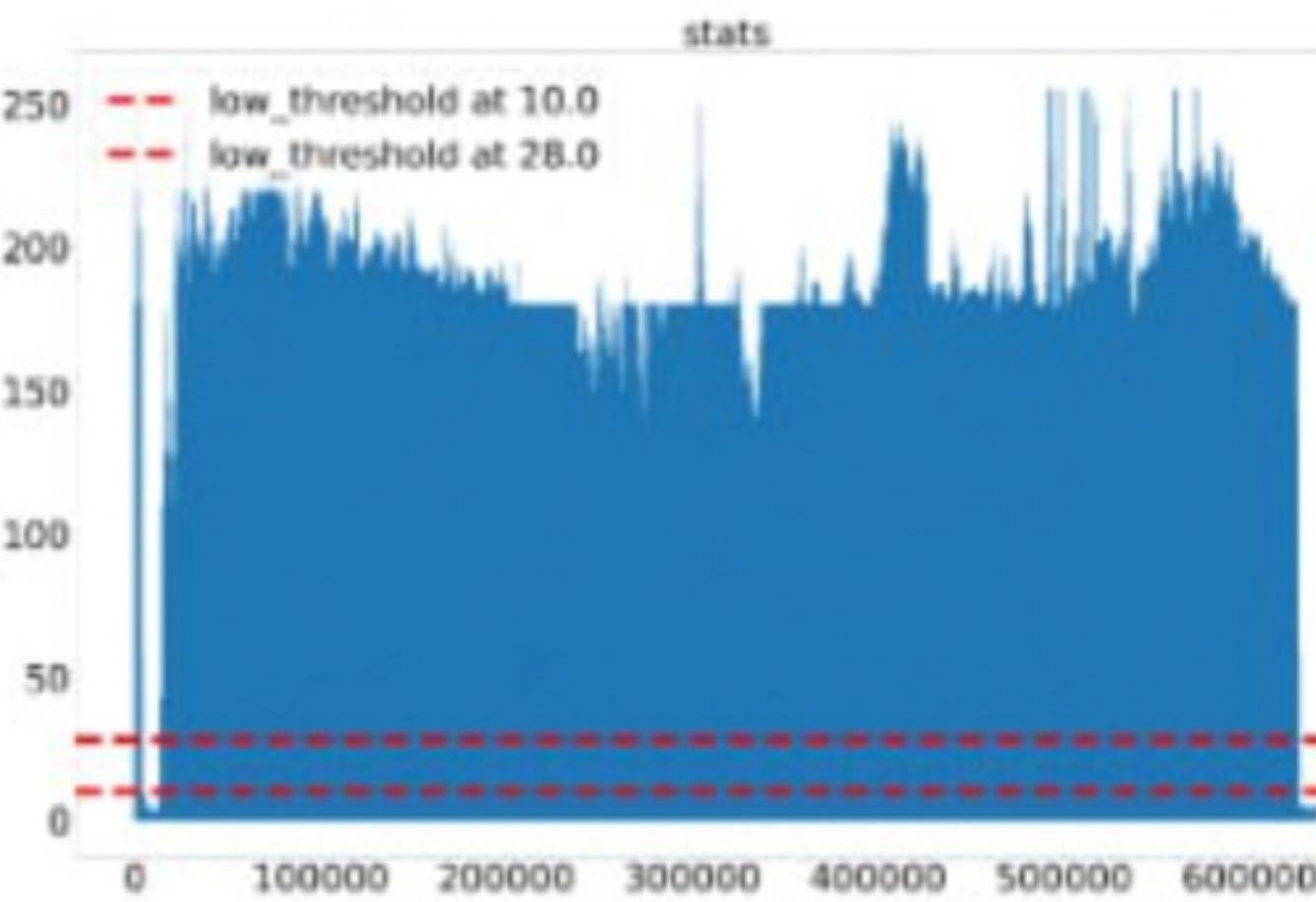
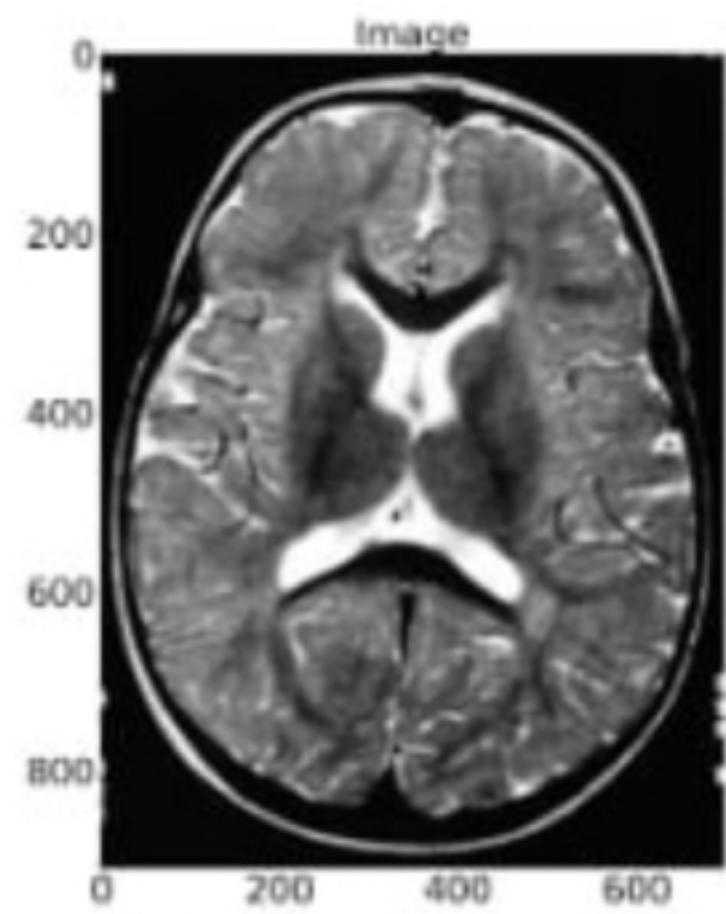
quantile\_0.8: 39.0  
quantile\_0.99: 99.0



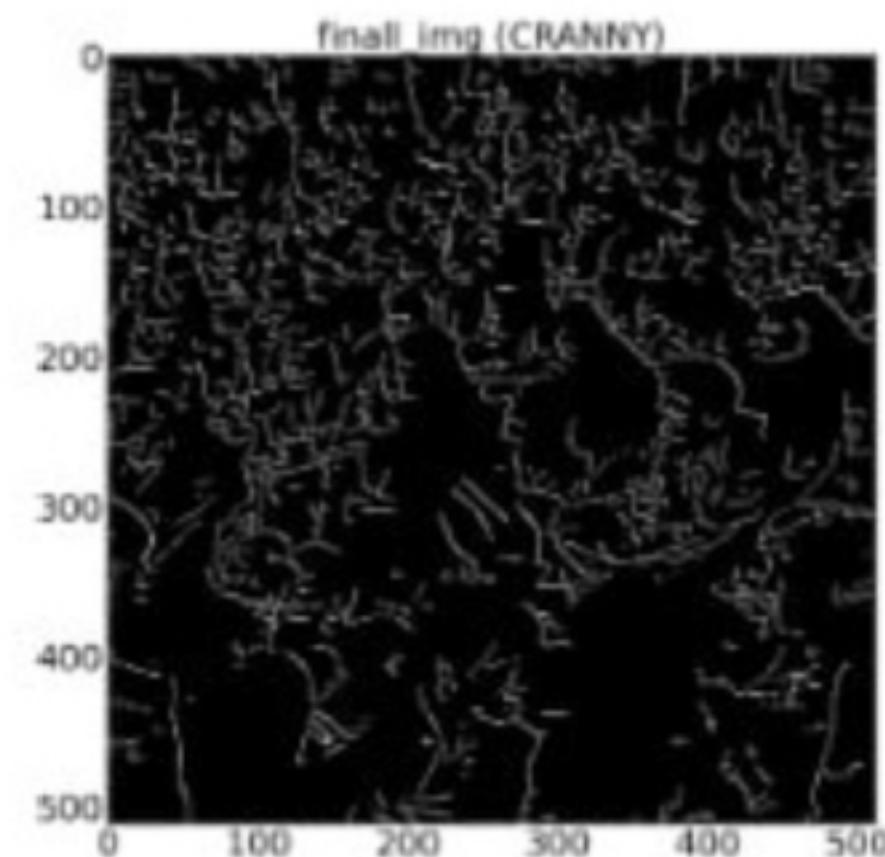
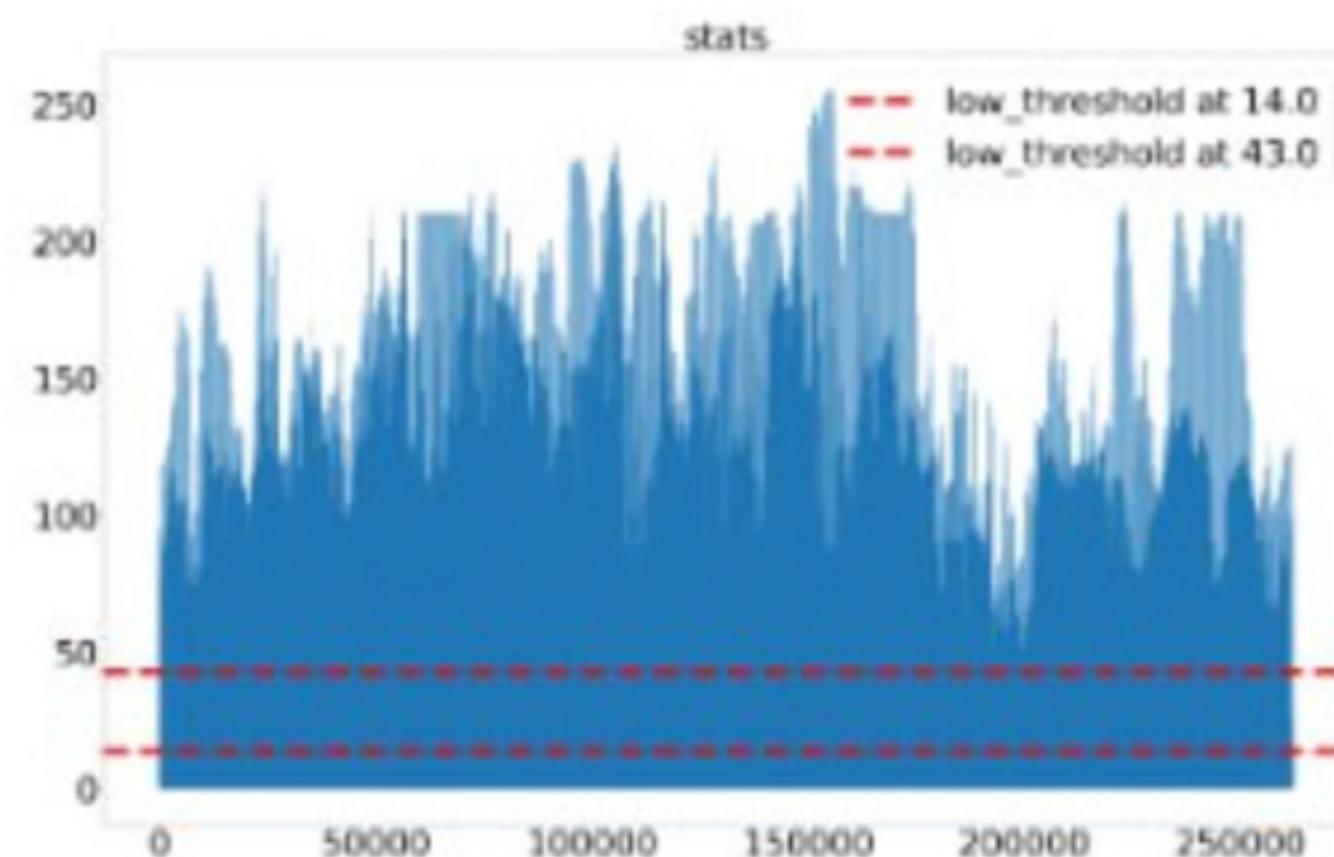
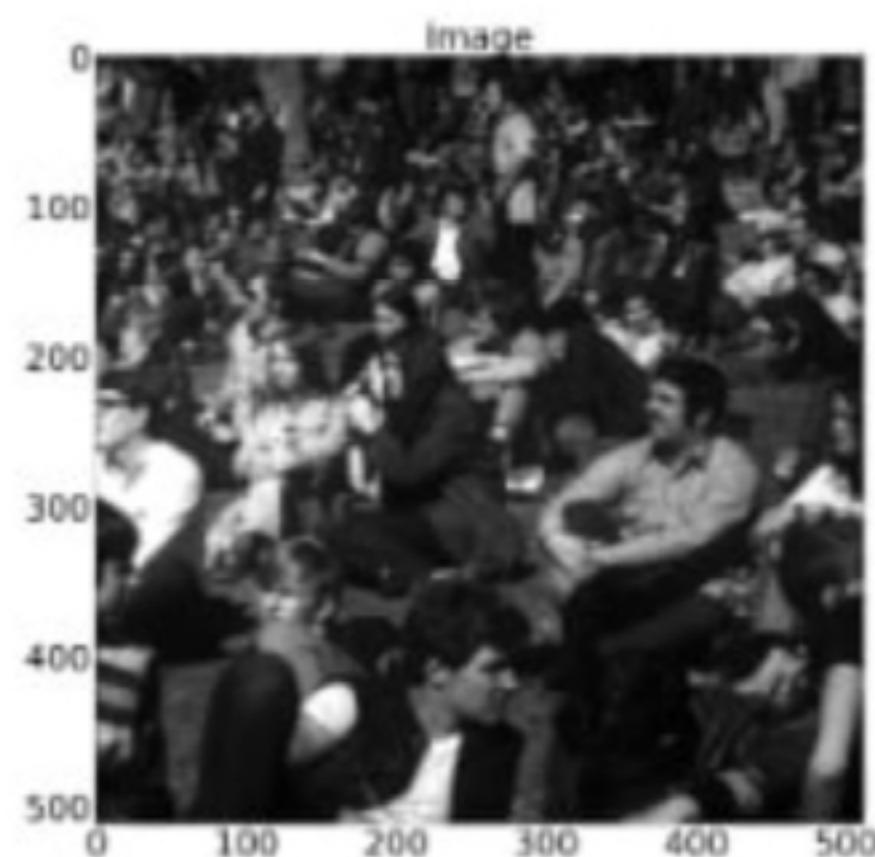
quantile\_0.65: 14.0  
quantile\_0.85: 39.0



quantile\_0.65: 10.0  
quantile\_0.85: 28.0



quantile\_0.65: 14.0  
quantile\_0.85: 43.0



2

الخطوة الثانية هي تقييم الأداء من حيث  
القدرة على اكتشاف الحدود . وهذا ينطوي على  
التحقق من المعايير التالية

### Performance of Edge Detection Operators

Edge detection operators can be compared in a number of different ways. First, the image gradients may be compared visually, since the eye itself performs some sort of edge detection. Figure 9.13 displays different gradients for noiseless as well as noisy images. In the noiseless case all the operators are roughly equivalent. The stochastic gradient is found to be quite effective when noise is present. Quantitatively, the performance in noise of an edge detection operator may be measured as follows. Let  $n_0$  be the number of edge pixels declared and  $n_1$  be number of missed or new edge pixels after adding noise. If  $n_0$  is held fixed for the noiseless as well as noisy images, then the edge detection error rate is

$$P_e = \frac{n_1}{n_0} \quad (9.25)$$

In Figure 9.12 the error rate for the Sobel operator used on noisy images with  $\text{SNR} = 10 \text{ dB}$  is 24%, whereas it is only 2% for the stochastic operator.

Another figure of merit for the noise performance of edge detection operators is the quantity

$$P = \frac{1}{\max(N_I, N_D)} \sum_{i=1}^{N_D} \frac{1}{1 + \alpha d_i^2} \quad (9.26)$$

Pratt Figure of Merit for Sobel ( $\alpha=1.0$ ): 0.00010088249726655042  
 Pratt Figure of Merit for Canny ( $\alpha=1.0$ ): 0.0008666564538587402  
 Pratt Figure of Merit for Sobel ( $\alpha=10.0$ ): 0.003067997415286651  
 Pratt Figure of Merit for Canny ( $\alpha=10.0$ ): 0.0319397400111683  
 Pratt Figure of Merit for Sobel ( $\alpha=100.0$ ): 0.19406390170130872  
 Pratt Figure of Merit for Canny ( $\alpha=100.0$ ): 0.302810249621156

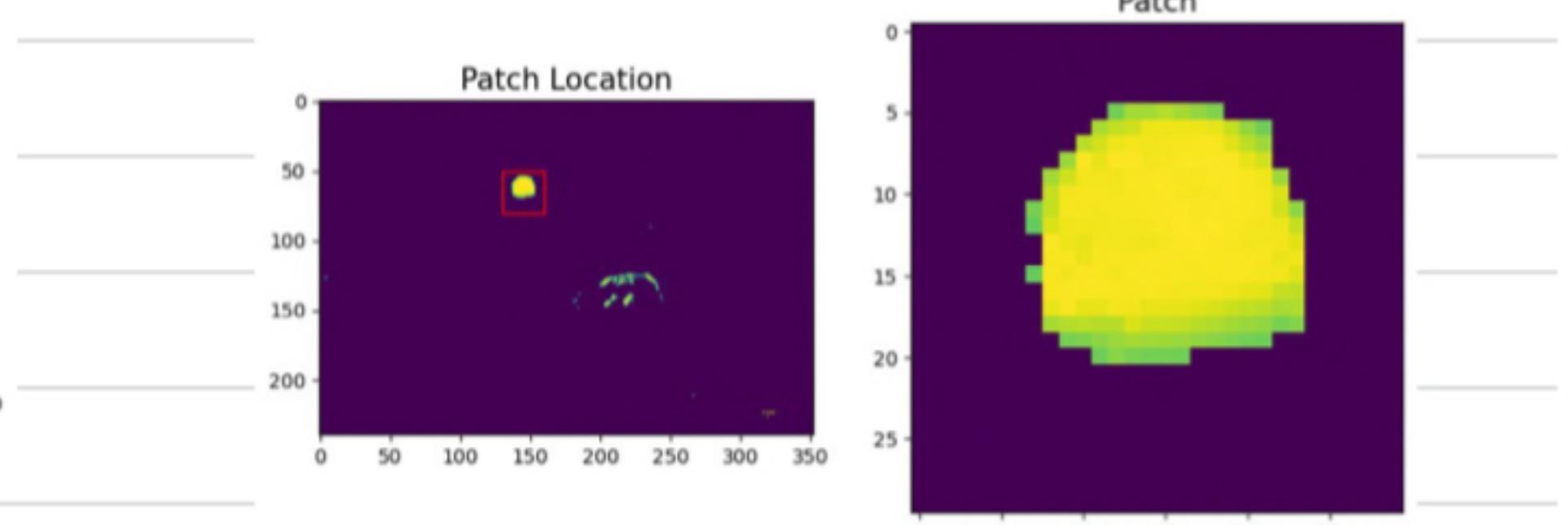
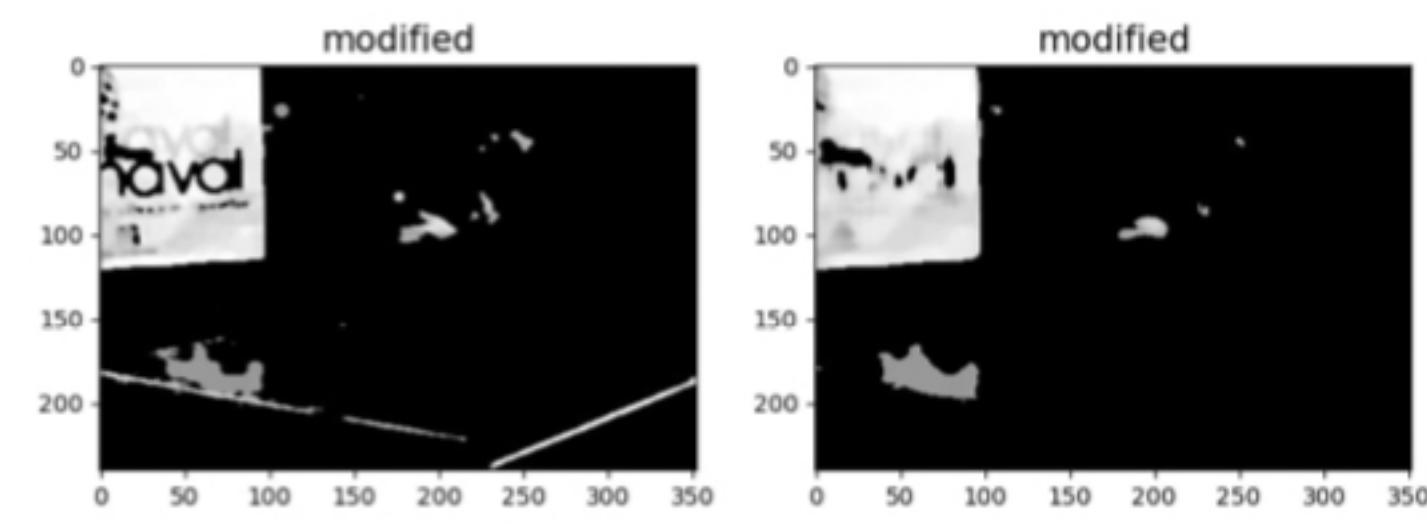
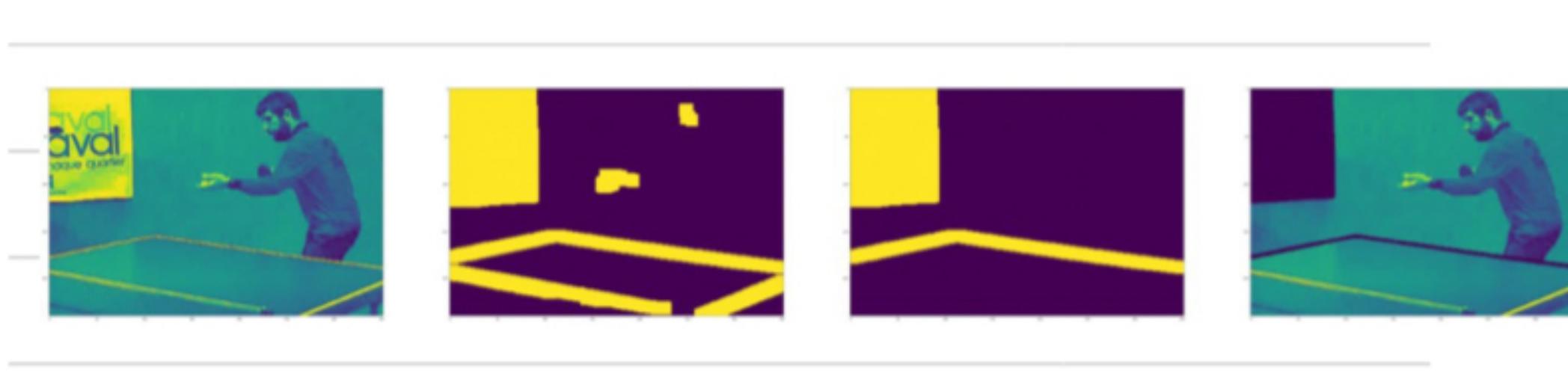
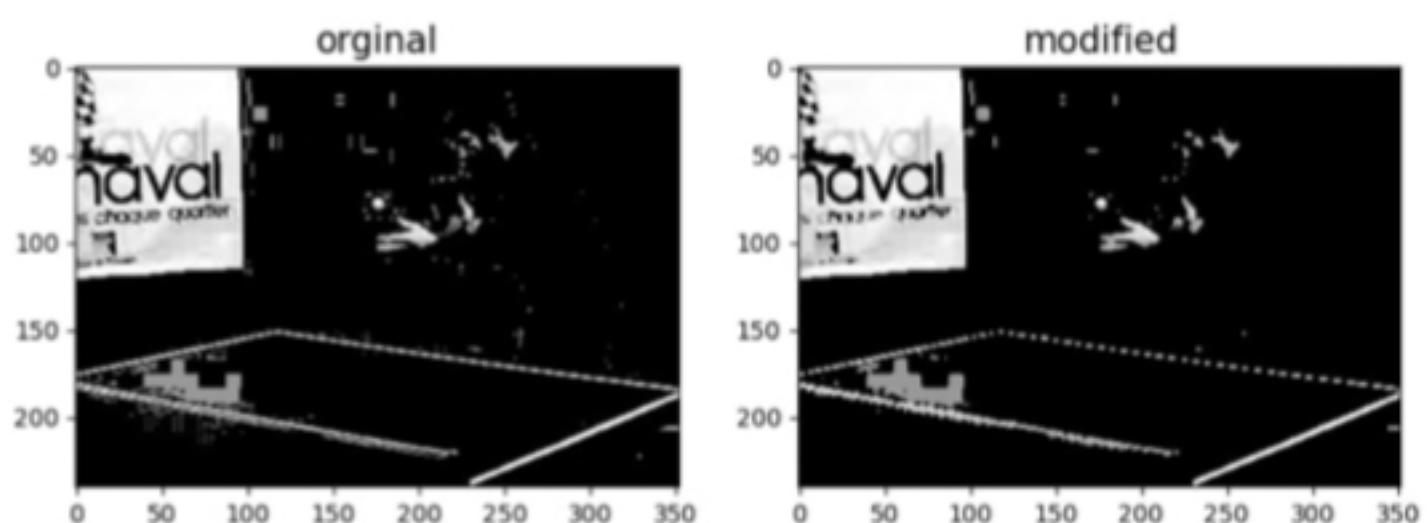
Canny هو الأداء الأفضل في الكشف عن الحدود

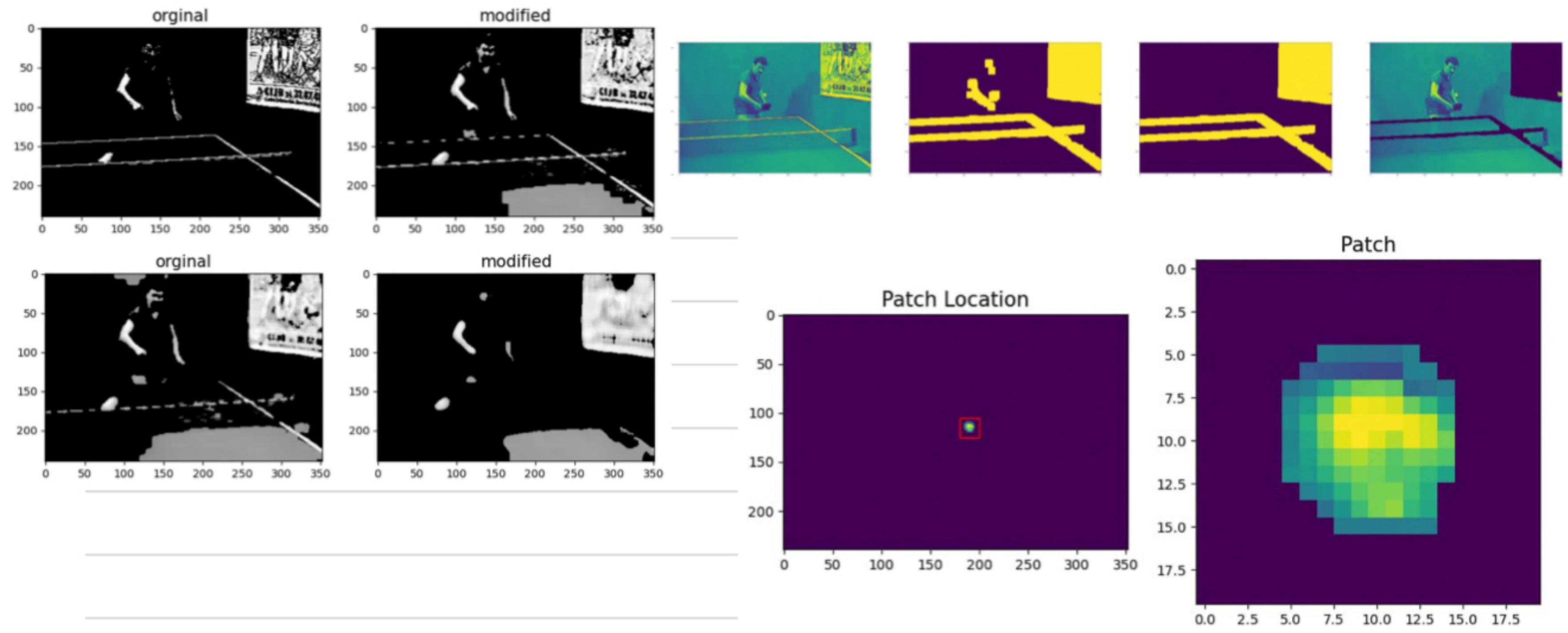
وهو الأداء الأفضل في الكشف عن الحدود

3

tracking table tennis Balls پرے کی اسی طرح  
 کہ درستال  
 سرفا سیستم خاصیت توں دو حصہ میں مکمل ہے  
 . Curl اور second دو حصے  
second اول : بیل کی پہلی لمحہ

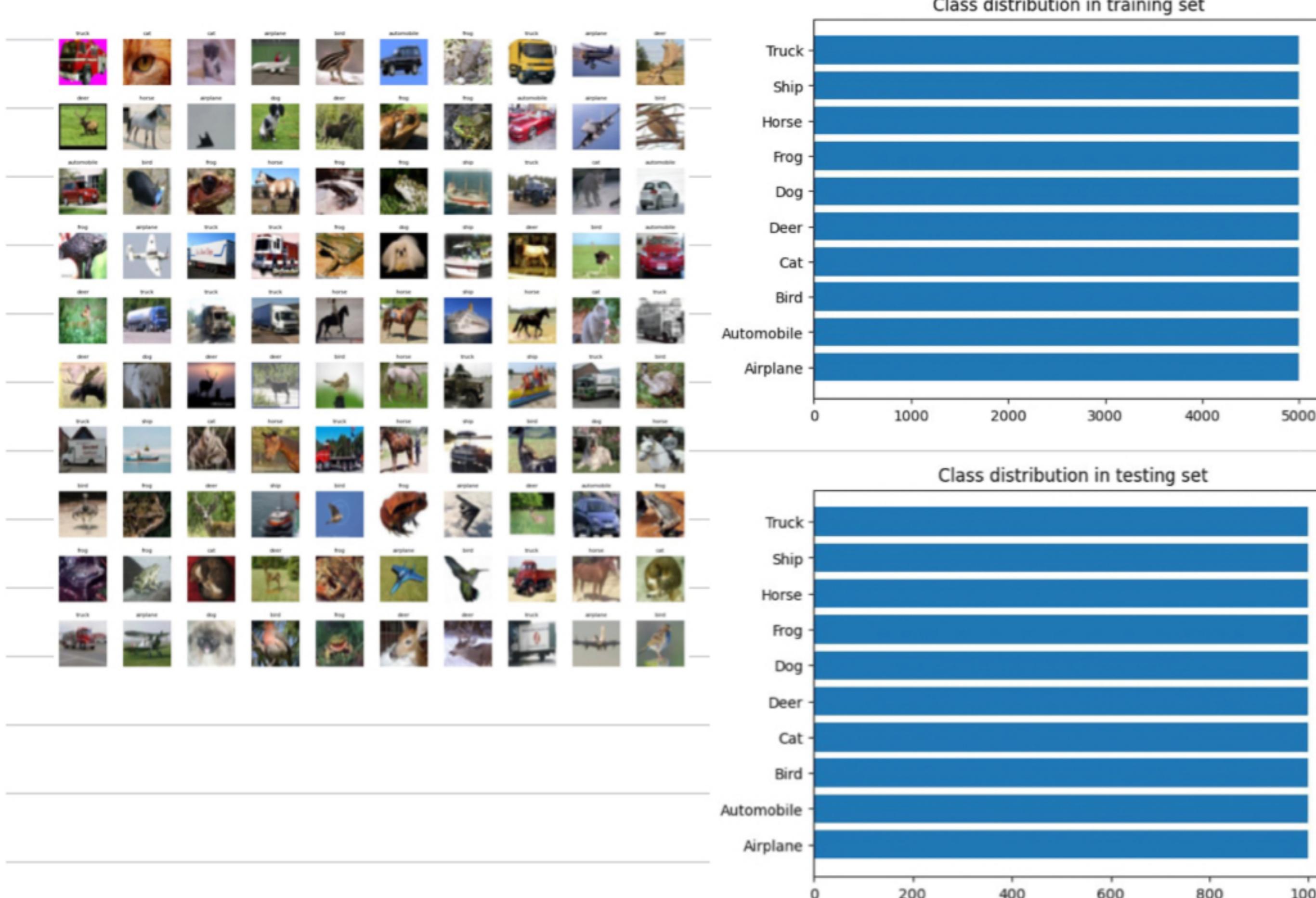
لہجے سے سیستم کی پہلی لمحہ  
 second morphological و HSV گیئے جوں  
 . Curl اور





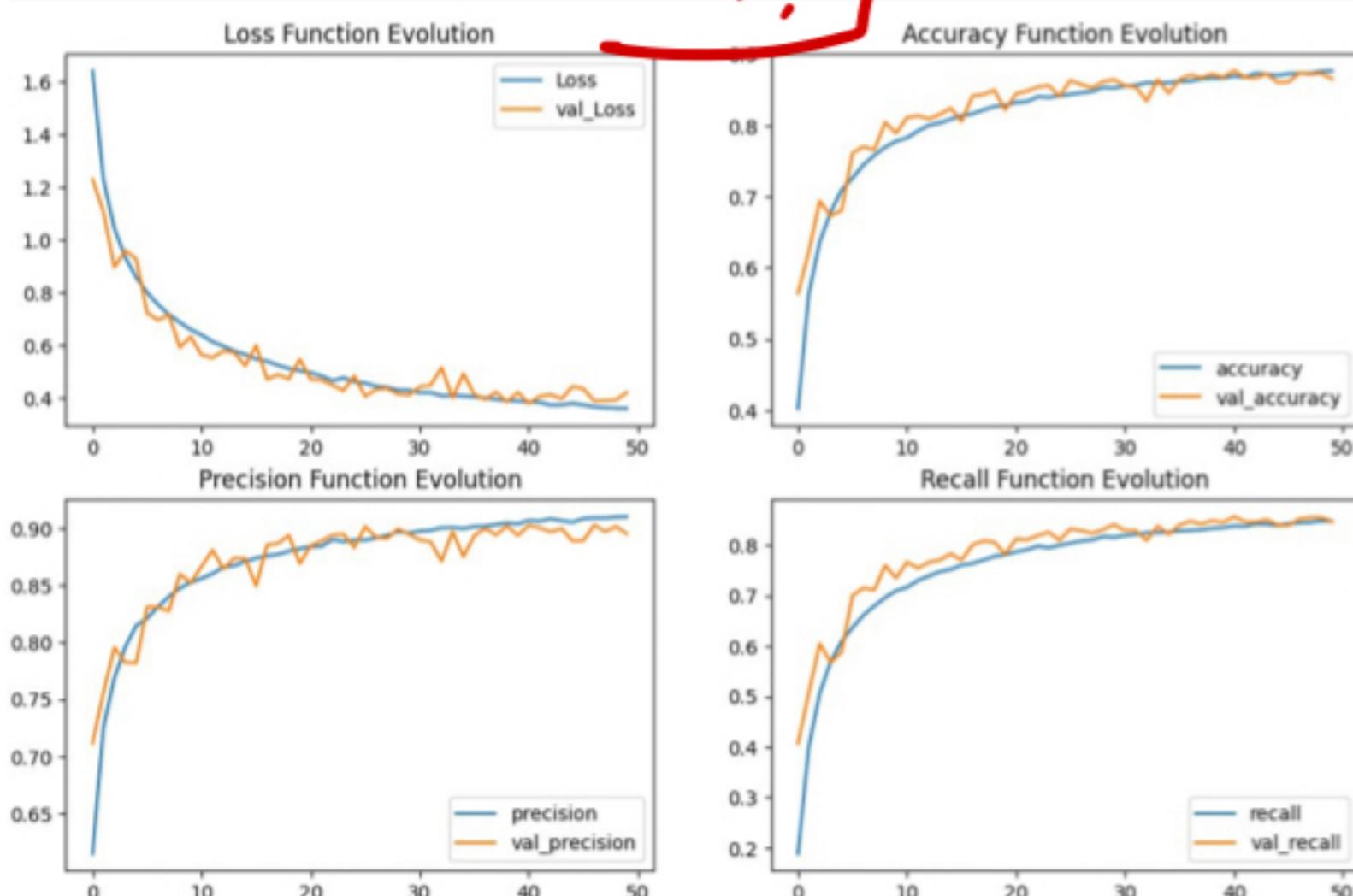
# Cifar10 - data

4



کاربرد فرآیند CNN برای این داده ها  
کوچک است. کاربرد آن در اینجا نمایش نیست  
اما باعث شدن این می تواند مدل های دیگر را  
با خود برابر کند

CNN: acc: 90%



Accuracy of the Random Forest model: 39.33%

Accuracy of the SVM model with kernel: 43.80%

Accuracy of the linear SVM model: 23.03%