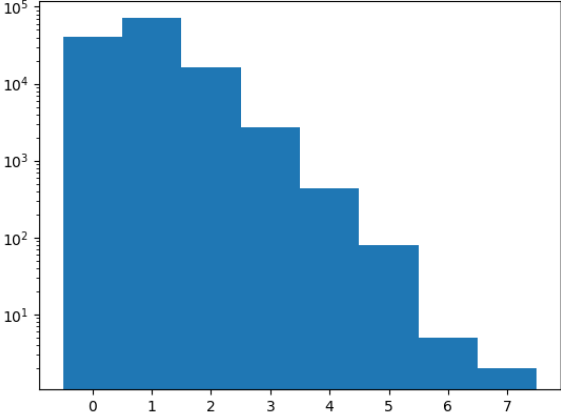
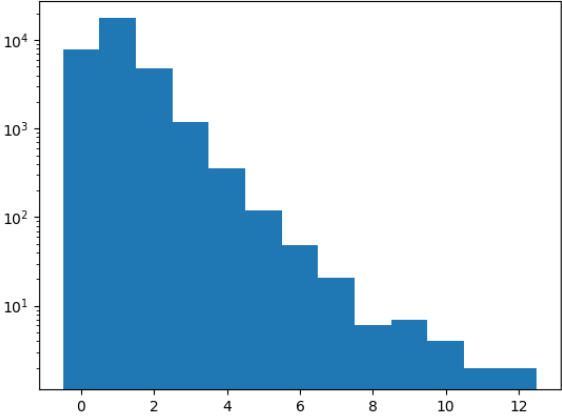
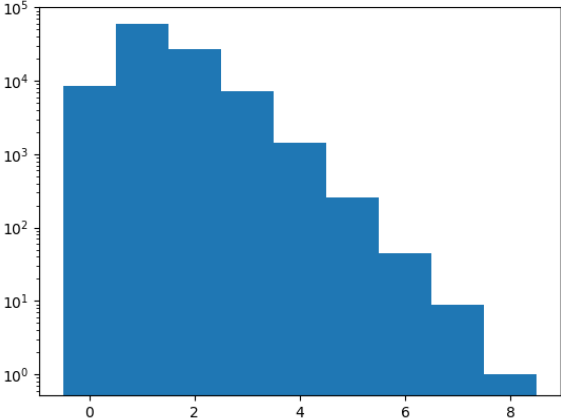
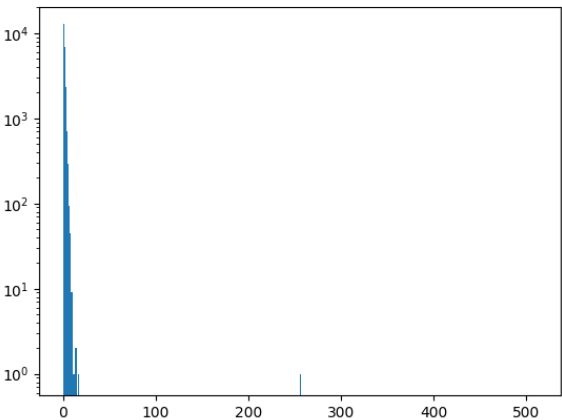
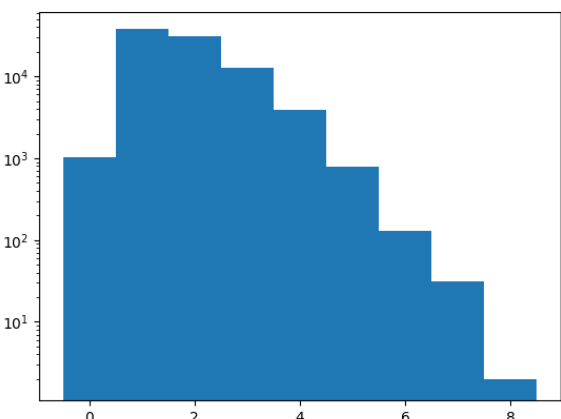
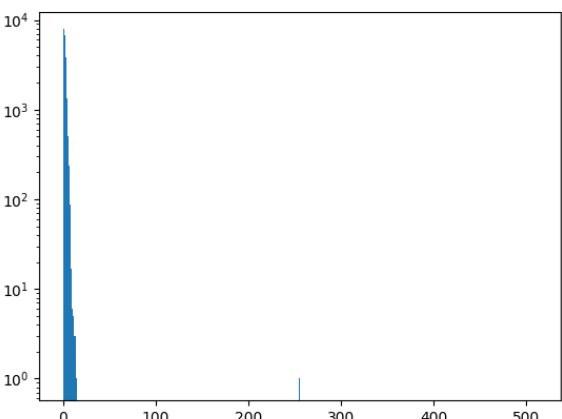


After careful investigation, the causation to the spikes in the token's offsets' histograms turns out to be straightforward. The algorithm iterates through the pictures row by row. Therefore, because neighbouring pixels tend to have matching values. When the algorithm starts to process a new pixel. The best matches to that pixel are most likely going to be found around that pixel, vertically and horizontally. The vertical relation will cause an increase of offsets that are approximately multiples of the width of the picture, creating spikes at those values. Regarding the shape of the histogram, the frequency of offsets decreases as the offsets grow larger. This is also because neighbouring pixels tend to have matching values. If the neighbouring pixels are most likely to contain matches, then it is less likely to have larger offsets, therefore, decreasing the frequency of larger offsets.

Lengths		
Buff Size	Boats	Camera
256		
1024		
5120		

The shapes of the token's lengths' histograms are nothing out of the ordinary. It is expected for the histograms to a bell-curve kind of shape as higher lengths are bound to have lower frequencies. It's also anticipated that higher lengths frequencies do increase as the buffer size increases as there are more possible matches.

Boats						
Buff Size	Offsets		Lengths		Encoding Time	Decoding Time
	Average	Standard Deviation	Average	Standard Deviation		
256	43.957	65.217	0.867	0.736	0m0.089s	0m0.065s
1024	275.245	288.877	1.368	0.814	0m0.092s	0m0.074s
5120	1158.81	1306.336	1.817	0.944	0m0.156s	0m0.052s

Camera						
Buff Size	Offsets		Lengths		Encoding Time	Decoding Time
	Average	Standard Deviation	Average	Standard Deviation		
256	70.255	89.362	1.045	0.900	0m0.027s	0m0.017s
1024	265.113	278.548	1.566	3.728	0m0.031s	0m0.021s
5120	1184.520	1348.220	2.071	4.094	0m0.041s	0m0.015s

Boats: the image seems to have very similar color scheme which leads me to believe that most colors/characters could be found within a buffer size of 256.

Camera: the camera image also has similar colors accepts for the man and camera in the middle. Therefore, I suggest a bigger buffer size of 1024.