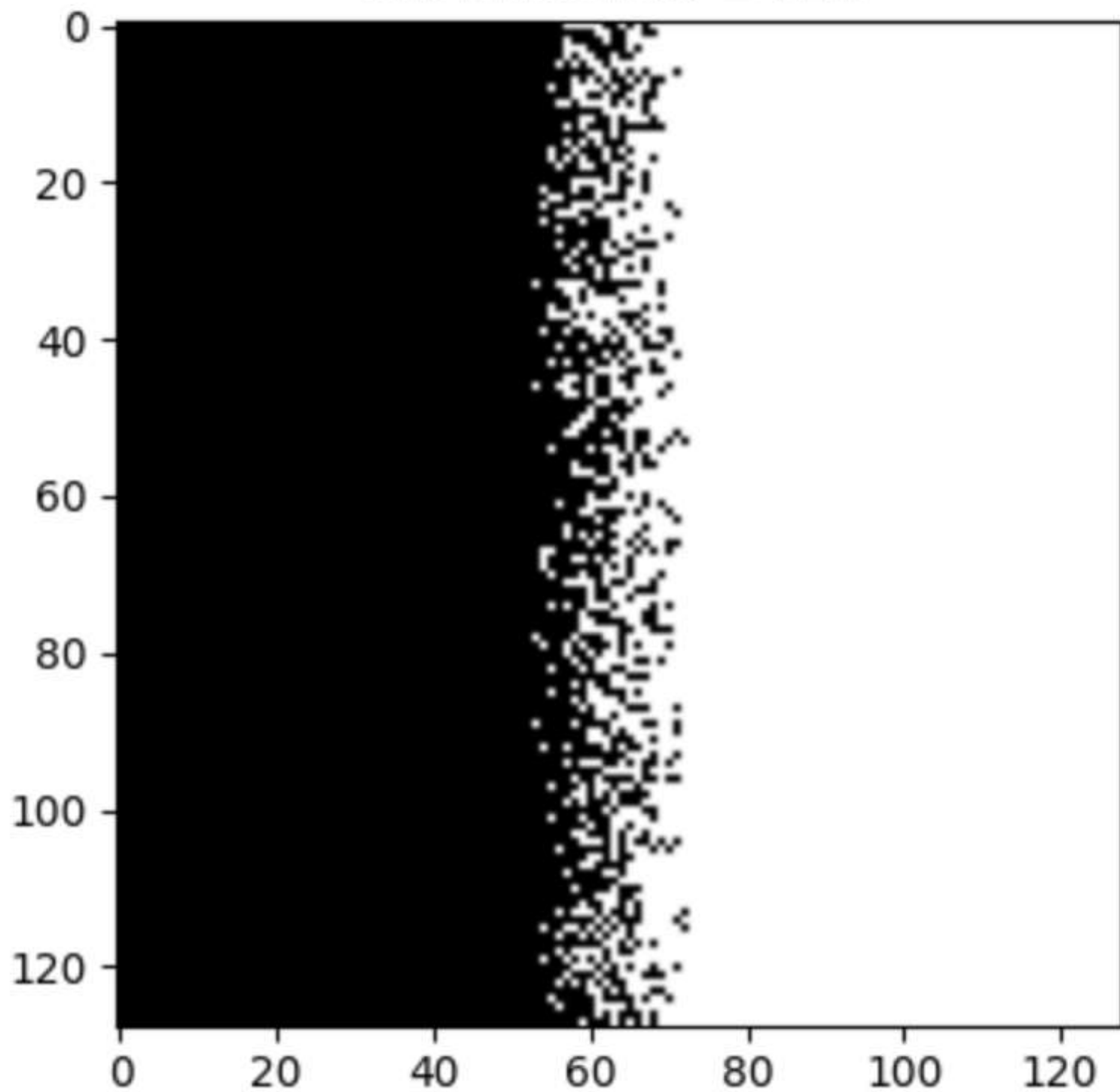
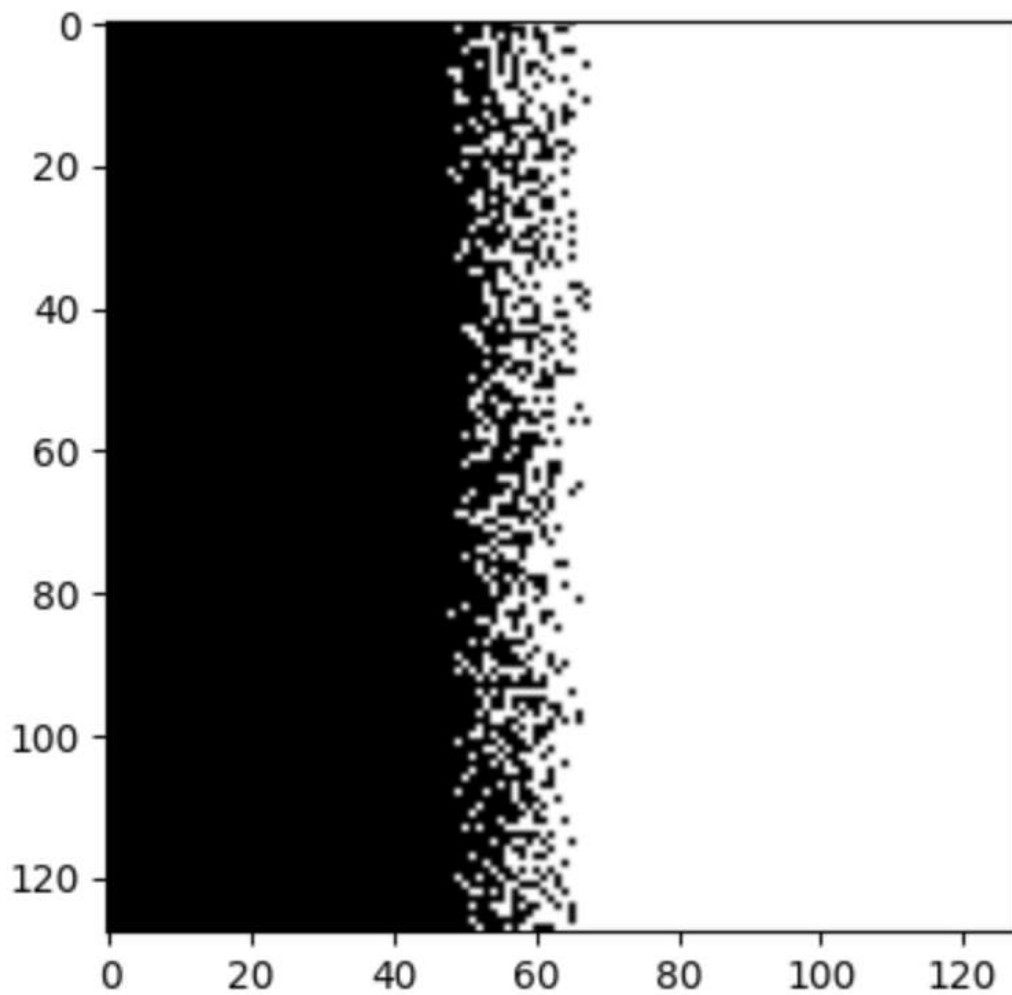


GA Threshold = 144



GAE Rule-based



* GA Result → Best threshold found = 144

* GAE Rule-based result → learned rule = $0.65 \times \text{pixel mean} + 40$

1) Original image → synthetic gradient + noise

2) GA thresholding → clear black & white split at threshold = 144