

# Improving JPEG Compression Using Mutations and Deep Learning

## Our Best Results

In addition to testing the mutated JPEG algorithm on our Test Image Set, we also tried it on a variety of other random images from internet. Here are some of our best results. As you can see the improvement over standard JPEG can reach as high as %26.

### Standard JPEG



Quality Factor: 90  
SSIM: 0.986794  
File Size: 22730  
BPP: 1.047659

### Mutated JPEG



Quality Factor: 90  
SSIM: 0.986819  
File Size: 16719 (%26.4 less)  
BPP: 0.770603



Quality Factor: 90  
SSIM: 0.969522  
File Size: 50376  
BPP: 2.308284



Quality Factor: 90  
SSIM: 0.969526  
File Size: 41123 (%18.4 less)  
BPP: 1.884302

## Standard JPEG



Quality Factor: 90  
SSIM: 0.978035  
File Size: 36978  
BPP: 1.694373

## Mutated JPEG



Quality Factor: 90  
SSIM: 0.978061  
File Size: 30119 (%18.5 less)  
BPP: 1.380086



Quality Factor: 90  
SSIM: 0.976099  
File Size: 38591  
BPP: 1.768283



Quality Factor: 90  
SSIM: 0.976143  
File Size: 30568 (%20.8 less)  
BPP: 1.40066



Quality Factor: 90  
SSIM: 0.977075  
File Size: 38963  
BPP: 1.785328



Quality Factor: 90  
SSIM: 0.977079  
File Size: 32621 (%16.3 less)  
BPP: 1.494731