

EN-74 ECE: Introduction to Image Processing
Tufts University
Fall 2007
Problem Set 4
Due October 4, 2007

1. Gamma transform. Explain why the transformation

$$s = cr^\gamma \quad \gamma > 0$$

Can either lighten or darken an image depending on γ . How should c be chosen to ensure that $s=255$ when $r=255$?

2. Implement piecewise linear stretch with three pieces that are not anchored to (0,0) and (255, 255). Feel free to modify existing code. Experiment with it to see how “best” to choose the breakpoints. Write up results.
3. McAndrew problems at the end of chapter 4
 - a. Problem 4
 - b. Problem 7
 - c. Problem 10