



Project title: Equalização de histograma (histogram equalization)

Project number: 03_02

Course number: PGENE 523 – PROCESSAMENTO DIGITAL DE IMAGENS

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Theme

- (a) Write a computer program for computing the histogram of an image.
- (b) Implement the histogram equalization technique discussed in Section 3.3.1.
- (c) Download Fig. 3.8(a) from the book web site and perform histogram equalization on it.

As a minimum, your report should include the original image, a plot of its histogram, a plot of the histogram-equalization transformation function, the enhanced image, and a plot of its histogram. Use this information to explain why the resulting image was enhanced as it was.

Technical discussion

Para o presente trabalho utilizou-se da função de distribuição cumulativa (cdf – cumulative distribution function) para equalizar o histograma da imagem 3.8a do livro texto.

Results

Imagem de entrada



Figura 1: Imagem de entrada

Histograma da imagem de entrada

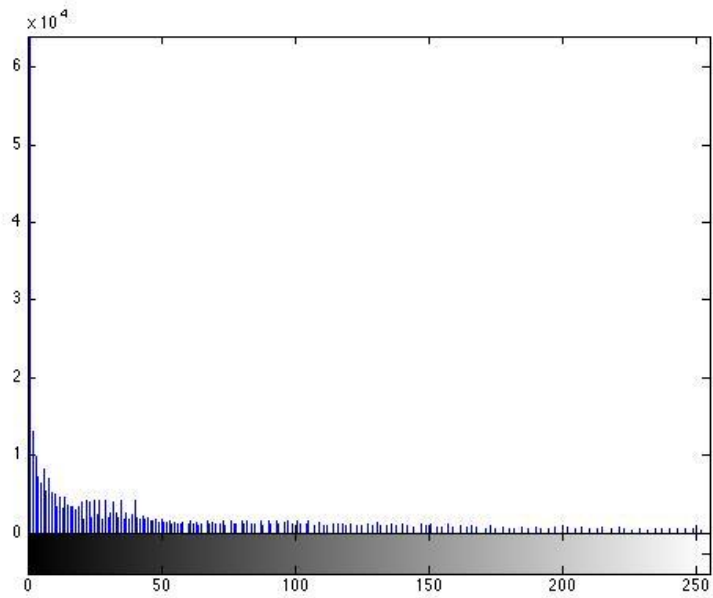


Figura 2: Histograma da imagem de entrada

Função de conversão

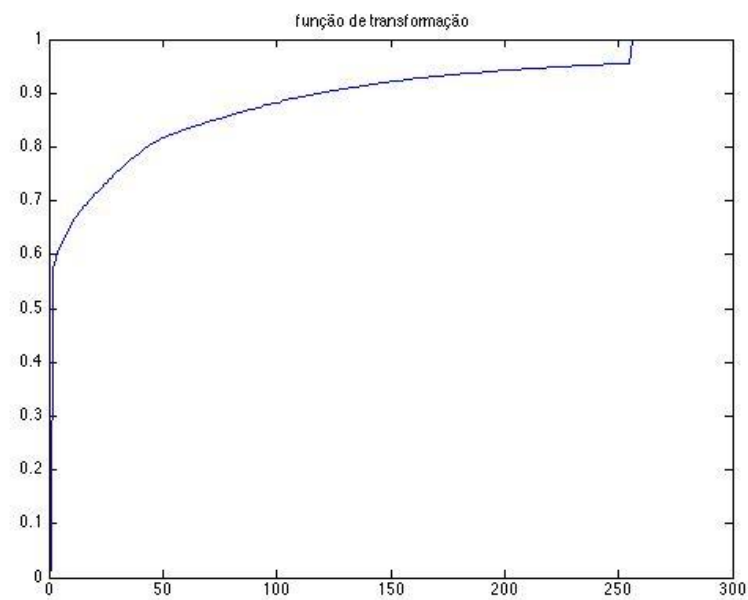


Figura 3: Função de conversão.



Figura 4: Imagem de saída.

Histograma da imagem de saída.

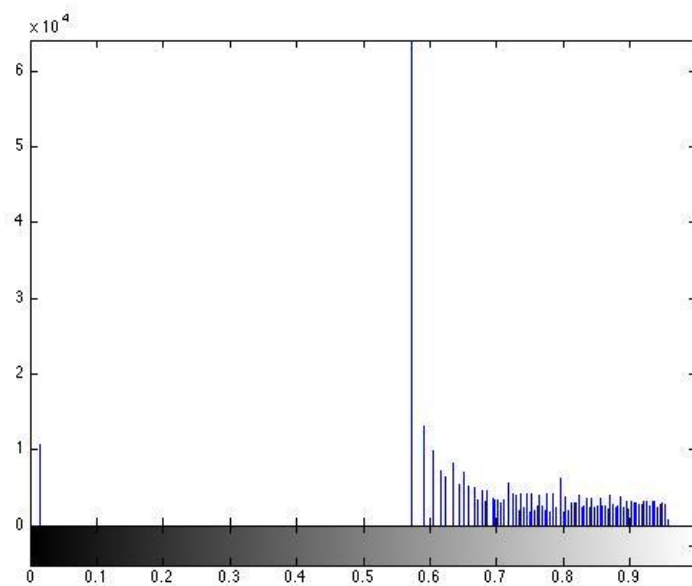


Figura 5: Histograma da imagem de saída.



References

Digital Imagem processing – 3rd. ed. / c2008
GONZALES, Rafael C.; WOODS, Richard E.. Digital image processing. 3. ed.
Upper Sadler River, N.J.: Prentice Hall, c2008. 954 p. ISBN 978-0-13-168728-8