

Explain and exemplify the example of contrast stretching and gamma correction. Where do we use these operations in practice?

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## Contrast stretching: formula

$$T[r] = \frac{255 \text{ (new dynamic range)}}{H - L \text{ (old dynamic range)}}(r - L)$$

# Contrast stretching: example

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Before contrast stretching

Image



After contrast stretching

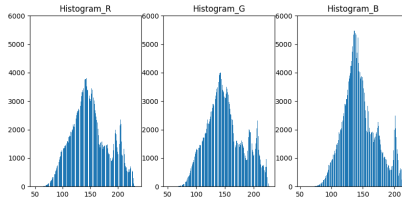
Image



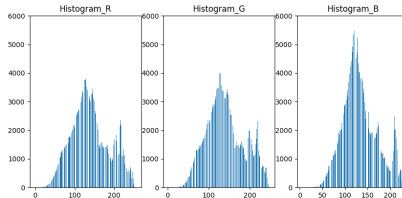
# Contrast stretching: histograms

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Before contrast stretching



After contrast stretching



## Gamma correction: formula

$$T[r] = cr^{\gamma}$$

## Gamma correction: example

Gamma = 0.5



Gamma = 1



Gamma = 2



## Contrast stretching example

## Gamma correction example