# Decolorize: fast, contrast enhancing, color to grayscale conversion

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**Abstract:** *We present a new contrast enhancing color to grayscale conversion algorithm which works in real-time. It incorporates novel techniques for image sampling and dimensionality reduction, sampling color differences by Gaussian pairing and analyzing color differences by predominant component analysis. In addition to its speed and simplicity, the algorithm has the advantages of continuous mapping, global consistency, and grayscale preservation, as well as predictable luminance, saturation, and hue ordering properties.*

**Keywords:** Color image processing; Color to grayscale conversion; Contrast enhancement; Image sampling; Dimensionality reduction.

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