

# Binary Image Representation using Complex Rational Functions

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A domain coloring on the complex plane is a map on it into a color-space. Painting the upper half-plane black and the lower one white, one draws binary (two-colored) images. Picking a suitable class of functions such as rational functions, one can then compare a domain coloring of such a function to some input image. Using gradient descent, minimizing the error between the drawn image and the input one can obtain a representation of the input as a rational function.