

# High-Dynamic-Range (HDR) Image Rendering

## Introduction

An image appearance model, designated iCAM06, was developed for High-Dynamic-Range (HDR) image rendering. The model, based on the iCAM framework, incorporates the spatial processing models in the human visual system for contrast enhancement, photoreceptor light adaptation functions that enhance local details in highlights and shadows, and functions that predict a wide range of color appearance phenomena. Evaluation of the model proved iCAM06 to have consistently good HDR rendering performance in both preference and accuracy making iCAM06 a good candidate for a general-purpose tone-mapping operator with further potential applications to a wide-range of image appearance research and practice.

## HDR Image Rendering

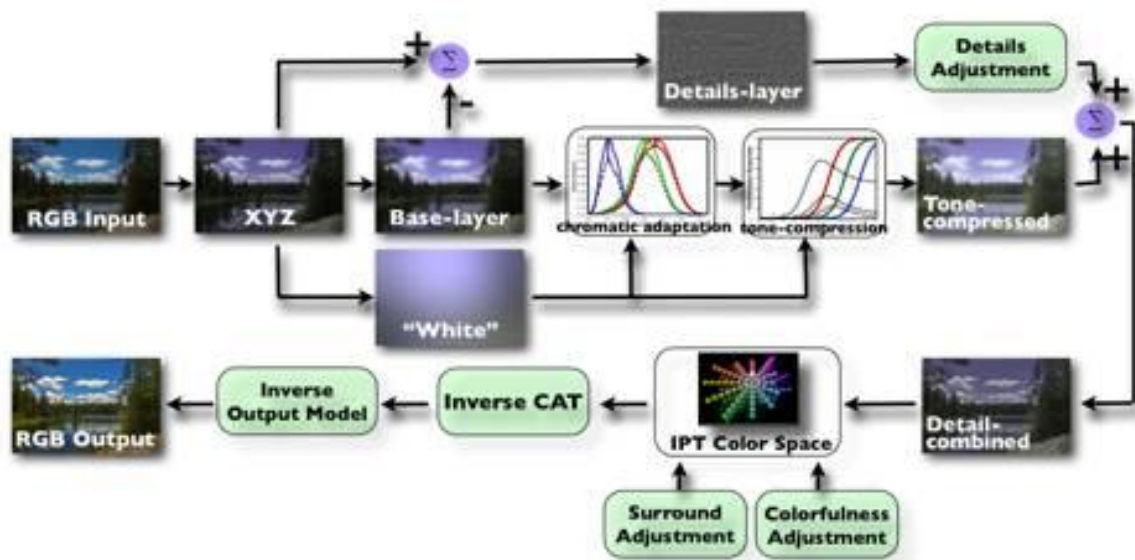


Figure 1: Flowchart of iCAM06 for HDR image rendering

## HDR image rendering examples



*Figure 2: iCAM06 rendering results*

## Publications

Kuang, J., Johnson, G.M., Fairchild M.D., iCAM06: A refined image appearance model for HDR image rendering, Journal of Visual Communication, 2007. ([download](#))

Kuang, J., Fairchild, M.D., iCAM06, HDR, and Image Appearance, IS&T/SID 15th Color Imaging Conference, 2007. ([download](#))

## Source Code

The iCAM06 model is currently implemented in Matlab. In addition to the basic Matlab installation, you will need the Statistics and Imaging Processing Toolboxes. Note that at one time, Signal Processing was required for the Imaging Processing Toolbox. All of the files and example data can be downloaded [here](#).

Any questions and comments about the source code should be addressed to [Jiangtao Kuang](#) or [Mark Fairchild](#).