



Welcome to the Transactions Art Submission Guide! Here you can find all of the reference material you need to help with accurate and correct image preparation for all IEEE Computer Society Transactions. Please note this guide is only to help with the images portion of your manuscript.

Please view the table of contents below to choose your category of interest:

LAYOUT AND STYLE

COLOR GUIDE

IMAGE SPECS

FIGURE LABELING

AUTHOR PHOTOS

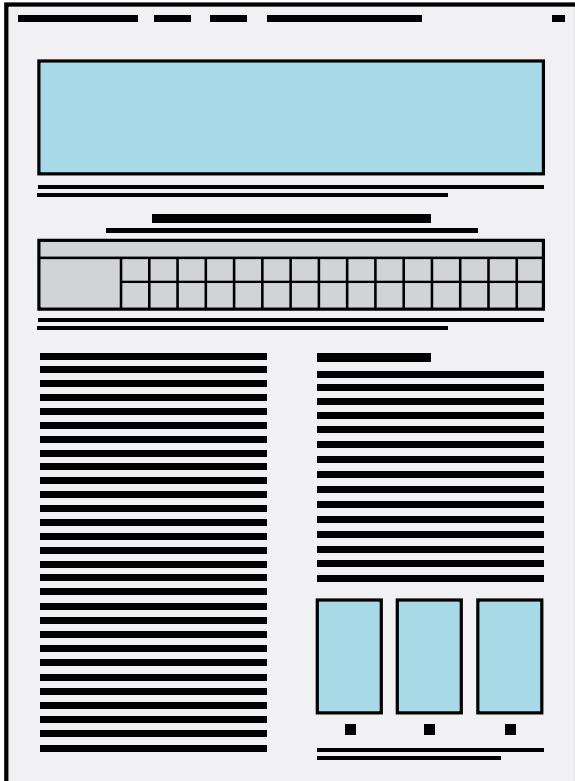
MISC. INFORMATION

Additional links provided:

[View Transactions List](#)
[Peer Review Center for Journals](#)
[Computer.org](#)

LAYOUT, STYLE, AND FORMATTING OVERVIEW

Below is an illustrated example of an edited article page showing a 2-column figure, a 2-column table and a 1-column figure containing labels. The Quick Facts table gives some of our journal styling information.



Quick Facts

Trim Size:

7.88 x 10.75 in / 20.02 x 27.31 cm

Section Headers Style:

Helvetica Bold 12 pt (small caps)

Text Format:

2-Column

Figure Labels Style:

Helvetica Medium 8 pt (no aliasing)

Article Title Style:

Helvetica Medium 24 pt

Body Text Font:

Palatino 9.5 pt

Author Names Style:

Helvetica Medium 12 pt

Algorithms and Inposition Art:

1-column

Abstract, Index Terms, & Figure Captions Style:

Helvetica Medium 8 pt

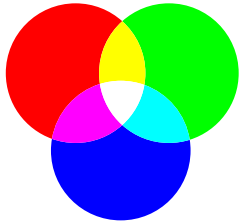
Figure and Table Sizes:

1-column or 2-column width

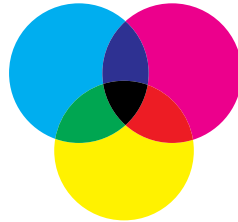
To see PDF examples, visit your favorite [journal homepage](#) and download our **FREE Featured Articles** available for each latest Transactions issue.

COLOR GUIDE

This section is designed to give a brief overview of the differences between RGB, CMYK, and Grayscale as well as some guidelines and information for preparing your images for the best results on screen and in print. The three color spaces we use are introduced below.



RGB



CMYK



GRAYSCALE (100% - 0%)

RGB

RGB is the additive primary color model which uses Red, Green, and Blue lights to create color. This is typically used on electronic devices or displays such as computer monitors and LCDs.

CMYK

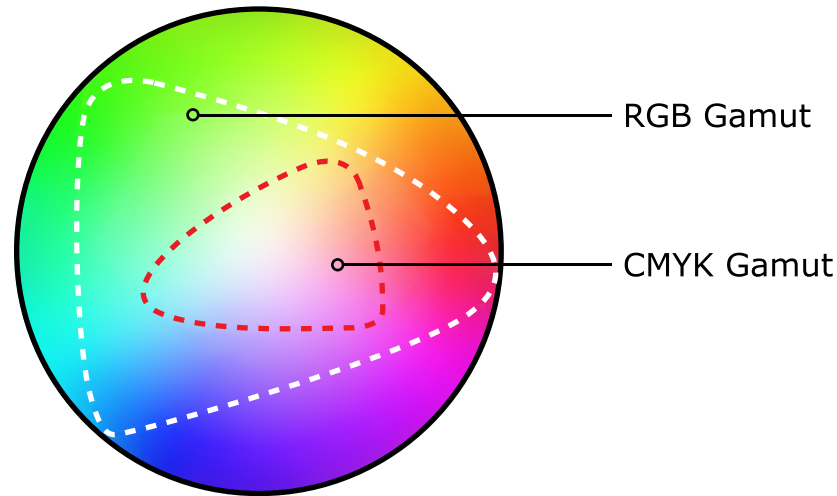
CMYK is the subtractive color model which uses four colors of inks, Cyan, Magenta, Yellow and Key Black, to create color. This method is used for color printing from home printers to large presses.

Grayscale

Grayscale is a model that uses black and white and shades of gray through values and intensity to create its images.

COLOR GUIDE CONTINUED...

Below is an example of the color range available to RGB and CMYK in the visible color gamut. CMYK has a much smaller color space and many colors available in RGB are not possible in CMYK. If you are providing images to a journal that prints in color, it is best to preview your color images in CMYK to view more accurate results before submission.



The Visible Color Gamut

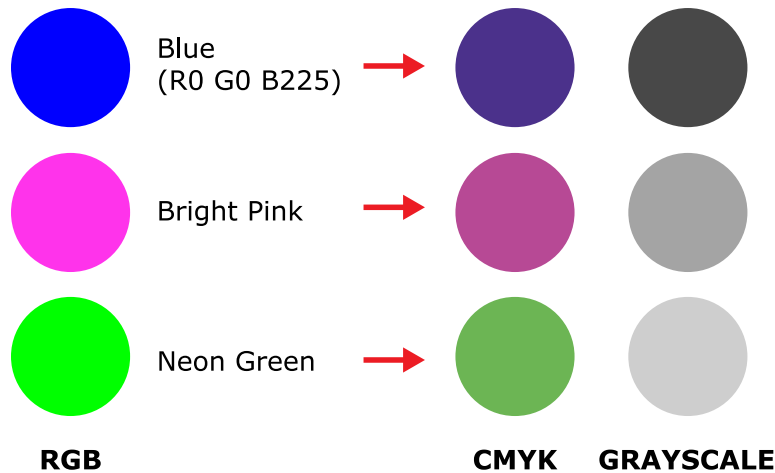
The next section will show examples of common color shifts, particularly when converting RGB images to CMYK or grayscale. Follow the guidelines on the next page to maintain image quality across your figures.

COLOR GUIDE CONTINUED...

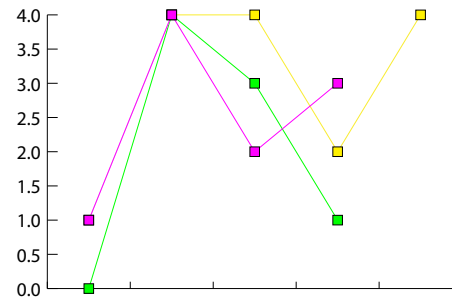
Most of our journals are printed in black and white (Grayscale).

If possible, create images in grayscale to view the best results. Certain bright colors do not translate well to Grayscale and the colors will become very light and hard to see. This typically effects images that have thin lines, dots, or other information that is represented graphically.

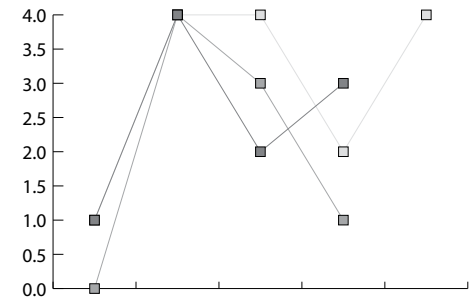
If images are submitted in RGB, you will see color shifts in your images after we convert them to CMYK or Grayscale during the art conversion process for printed journals. See the examples below.



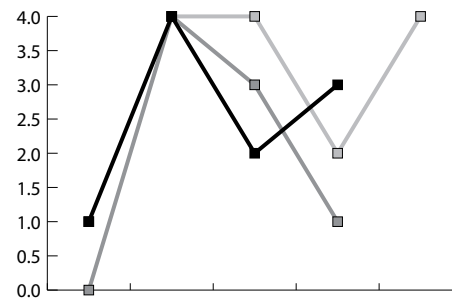
We recommend avoiding bright, light, or neon colors for images that will be in print.



RGB Graph with thin lines



Converted to Grayscale



Redone with the journal's specs in mind

Example of a graph submitted to a journal that prints in Grayscale.

Notice how the color shift and thin lines make the graph much harder to see.

Creating the image in Grayscale with good contrast and thicker lines tremendously improves image quality.

Tip: Create lines with at least a 1 pt stroke and use values higher than 30% gray.

COLOR GUIDE CONTINUED...

Please review the following chart to see the optimal color mode for your images based on journal submission guidelines for 2011.

COLOR MODE	2011 TRANSACTIONS TITLES												
	TAC	TLT	TSC	TCBB	TPAMI	TVCG	TDSC	TC	TKDE	ToH	TMC	TPDS	TSE
RGB	●	●	●		●	●	●						
CMYK				●	●								
GRAYSCALE				●	●			●	●	●	●	●	●

Online Only Titles
 Color Printed Titles
 OnlinePlus Titles
 Black & White Only Printed Titles

By request the online PDF version of your article can be in color even if the journal is printed in Grayscale. It is best to submit this request to the Transactions Coordinator during the peer review/acceptance process *before* it reaches art conversion.

IMAGE SPECIFICATIONS

This section provides information for helping authors create high quality art tailored for their manuscript. **You do not have to submit individual files with your manuscript. We can convert art from your submitted manuscript PDF.**

Accepted and Preferred File Types:



We prefer the file types listed above for accuracy and efficiency when converting the art for your manuscript. Please avoid submitting other file types for your artwork. **Do not embed files into Word Documents.** (.doc/.docx)

Raster (Bitmap) Images

Resolution dependent art that is made up of pixels. Resizing these types of art files will cause loss in quality. It is best to create the images directly to the correct figure dimensions. Typical raster formats are **TIF, JPG, PNG, BMP,** and **GIF.** **PDF** can contain both raster and vector elements. More information on resolution is available on the next page.

Vector Images

Resolution independent art that is mathematically drawn with paths, points, and shapes. Vector art can be resized to any size with no loss in quality. Typical formats are **EPS** and **PDF.**

We convert all vector files to EPS and all raster images to TIF with LZW Compression.



IMAGE SPECIFICATIONS CONTINUED...

Resolution (Raster/Bitmap Images Only)

Resolution deals with the amount of **pixel density** of a raster image. Ideally we want your images to have a **minimum resolution of 300 pixels/inch or 118 pixels/cm** for high quality print. If your application does not allow control of the resolution output please use the pixel values provided below.

Image Dimensions

Images can have a 1-column or 2-column maximum width and a single maximum height. **Figures/tables close to 1-column width will also be reduced to fit in the single column space.** Image size reduction can also occur to help reduce page count. **Images larger than the 2-column width will be reduced to fit the page margins.**

Figures/tables that exceed the maximum height will be reduced to fit. If you submit a figure or table that is too large for reduction, we may split it across two pages but for style purposes **it is best that a figure/table fits on a single page.**

Please reference the table below for creating your figure dimensions. It is best to output raster images to their final size within these dimensions. Vector art can be any size; however, sizing your art to the correct dimensions helps keep consistency in art conversion.

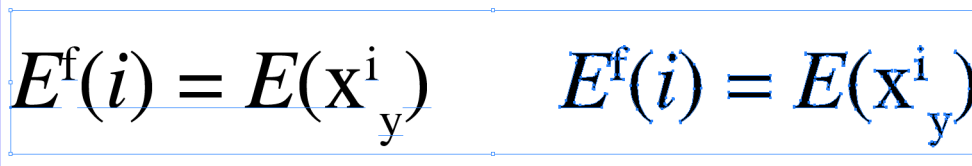
FIGURE/TABLE DIMENSIONS			
UNITS (Resolution)	1-COLUMN MAX WIDTH	2-COLUMN MAX WIDTH	MAXIMUM HEIGHT
PIXELS	1017 px	2070 px	2400 px
INCHES (300 Pixels/Inch)	3.39 in	6.9 in	8.0 in
CENTIMETERS (118 Pixels/CM)	8.61 cm	17.53 cm	20.32 cm

IMAGE SPECIFICATIONS CONTINUED...

Fonts - Text in Vector Images

If you are submitting individual EPS or PDF files to take advantage of vector art for your manuscript, you will want to follow a few simple guidelines to ensure any text in your figures stays accurate.

1. **Outline fonts.** The best method to ensure the highest accuracy of your text and math is to change all fonts into outlines/shapes. Below is an example of an equation being changed into outlines.


$$E^f(i) = E(x_y^i) \quad E^f(i) = E(x_y^i)$$

Left: Editable Times New Roman font. **Right:** Transformed into outlines to preserve accurate appearance.

2. **Embed fonts.** If you use a nonstandard, non-system or latex font, we cannot guarantee matching the font. Embedding fonts can help transfer the font subset.

3. **Use standard fonts.** If the first two methods are not available to you, we recommend the following postscript fonts that can be available to every system and cover a variety of styles and glyphs: **Courier**, **Helvetica***, **Symbol**, **Times****, and **ITC Zapf Dingbats**. ***Arial** can be substituted for Helvetica and ****Times New Roman** can be substituted for Times.

If none of these methods are available, you can still submit your artwork; however, we may not be able to accurately reproduce your text. **If files are not usable due to font problems we will change all vector art into raster images or create raster images from your original submitted PDF.**

IMAGE SPECIFICATIONS CONTINUED...

Naming your Figure Files

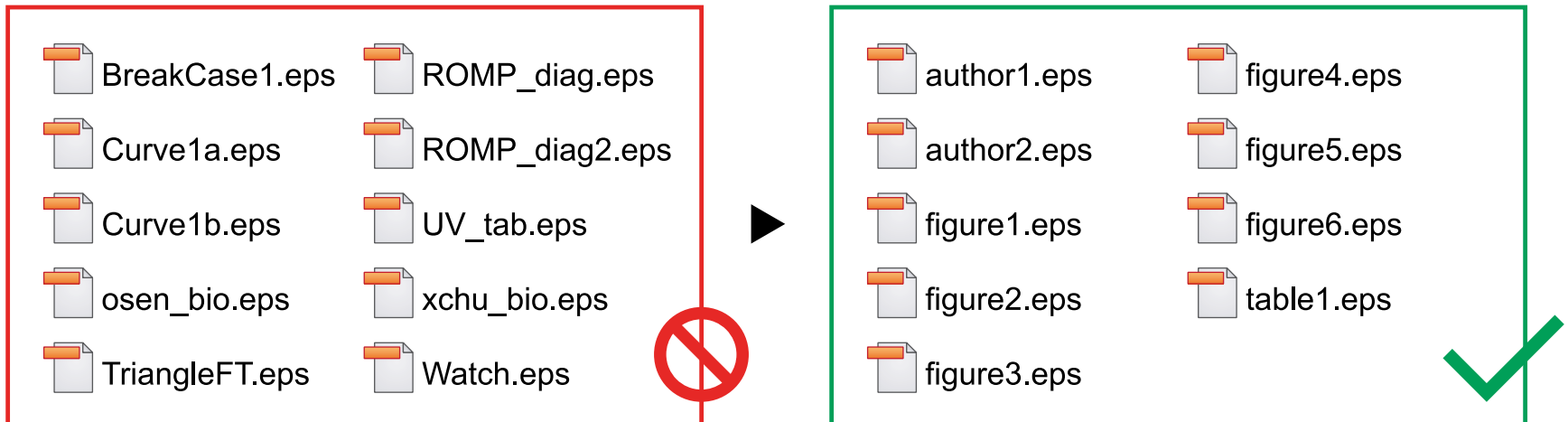
When submitting individual files, we prefer that files are named using the following naming scheme:

Figures: figure1, figure2, figure3 or fig1, fig2, fig3, etc. **Tables:** table1, table2, table3, or t1, t2, t3, etc.

Authors: author1, author2, author3, or a1, a2, a3, etc.

Figures with multi-image parts are preferred to be **submitted as a single file**. If possible **please avoid** submitting your figures in multiple parts such as fig1a, fig1b, fig1c, etc.

If we cannot use your files due to incorrect file naming, output anomalies, or font problems, **we will default to creating raster images from the original submitted manuscript PDF**.



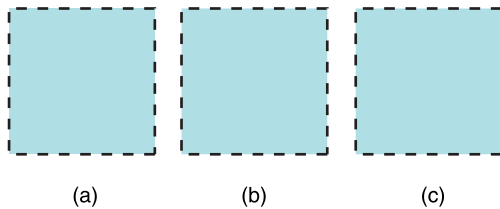
Left: Figure files submitted as EPS files with LaTeX naming and in multiple pieces. **Right:** Correctly submitted EPS files using our preferred file naming and all figures are single images.

HOW AND WHEN TO LABEL FIGURES

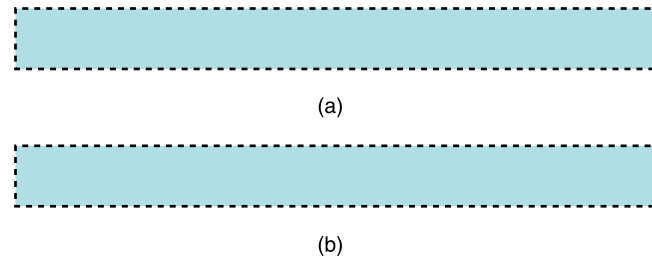
We use alphabetical labels in Helvetica Medium 8 point font. **Any direct captions or descriptions are removed from the image and will be re-edited into the figure caption.** We will also add labels if the figure caption calls out image references such as specific columns, rows, corners or left, right, middle, etc.

Usually labels are placed on the bottom or to the left side of the figure portion. Label placement is determined by figure width, height, and image arrangement. Below are some visual examples:

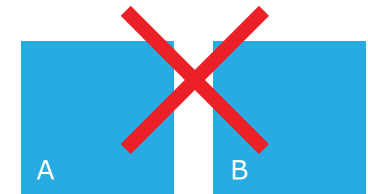
Example A



Example C

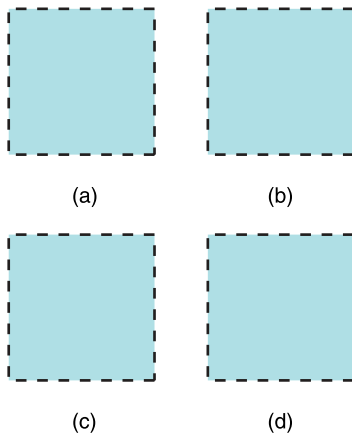


Example E

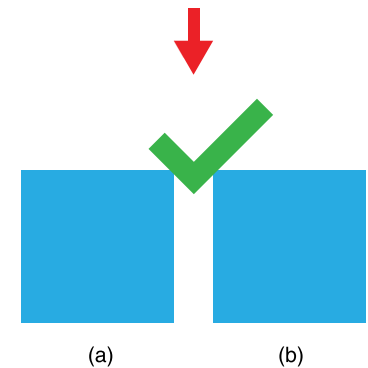


Do not create labels inside of image elements especially photos or gradients.

Example B



Example D



AUTHOR PHOTO SPECIFICATIONS

Our author photos have a few simple guidelines. Follow these specs to get the best quality out of your photo:

1. Author photos are **always Grayscale**. You can submit color photos but they will get converted.
2. We prefer the following file types if submitting individual photos: TIF, EPS, JPG, PNG, and PDF. If you do submit individual files we prefer if you name them: author1, author2, author3, or a1, a2, a3, etc.
3. Author photos are converted to a specific width/height ratio and print resolution*. (See image below.)

* Avoid using a small web image for your photo. The resolution and quality of the image is often too low for high quality print and your photo will be subject to pixelation or blurriness.

**Height:**

1.25 inches (300 pixel/inch)

3.18 cm (118 pixel/cm)

375 pixels

**Width:**

1 inch (300 pixel/inch)

2.54 cm (118 pixel/cm)

300 pixels