UCLA Research Workshop Series Summer 2020

PhotoShop

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What is Photoshop?
Adobe:

Create With Precision: Photography, Graphic Design, Compositing, Drawing & Painting.
Wikipedia:

Adobe Photoshop is a raster graphics editor
American Graphics Institute:

Adobe Photoshop is an application for image editing and photo retouching. Offering users the ability to create, enhance, or otherwise edit images, artwork, and illustrations.
Photoshop allows you to see and think about the visual world in different ways.
Vector vs. Raster Graphics
Vector Graphics

Uses geometrical primitives like points, lines, curves, and shapes based on mathematical expressions.
Vector graphics are based on vectors or paths which lead through locations called control points.
Vector Graphics

Small file size because all information resides in the structure describing how to draw the vector.
Raster or bitmap images is a dot matrix structure representing a grid of pixels.
Raster Graphics

Raster graphics are resolution dependent, they cannot be scaled up in resolution without loss of quality.

Image Source: http://greenwayprint.blogspot.com
Raster graphics are best for graphics with photographs and photo-realistic images, but can become very big files.
Color
A color space is a specific organization of colors. In combination with physical device profiling, it allows for reproducible representations of color, in both analog and digital representations.
Color Space

Anatomy of a CIE Chromaticity Diagram

Commission internationale de l’éclairage 1931 color space
Color Space

Commission internationale de l’éclairage 1976 Revised color space
Color Space

Color Space Comparison
Color Space

RGB Color Space

Image Source: https://en.wikipedia.org
Color Space

Additive color mixing
Color Space

RGB and CYMK
Color Space

RGB and CMYK colors

Visible color

RGB colors

CMYK colors

Image Source: https://graphicdesign.stackexchange.com
PhotoShop Tutorial Links:

- Raster Bitmap vs Vector Graphics: [https://youtu.be/U-X_rosRORg](https://youtu.be/U-X_rosRORg)
- What is the difference between RGB and CMYK?: [https://youtu.be/9hirYMZ7PQc](https://youtu.be/9hirYMZ7PQc)
- How to Use Layer Masks in Photoshop: [https://youtu.be/h5yW5hHjQrE](https://youtu.be/h5yW5hHjQrE)
- How to Create Perfect Selections Using Channels in Photoshop: [https://youtu.be/1VbaqBqz9Xc](https://youtu.be/1VbaqBqz9Xc)
- Two POWERFUL Photoshop Cut Out Techniques - Difficult Selections Made FAST and EASY: [https://youtu.be/v-Yq-dJISeU](https://youtu.be/v-Yq-dJISeU)
- How To Read An Image Histogram In Photoshop: [https://www.photoshopessentials.com/photo-editing/histogram/](https://www.photoshopessentials.com/photo-editing/histogram/)
- How to Use the Histogram in Photoshop: [https://youtu.be/ZrpH6UY42w](https://youtu.be/ZrpH6UY42w)
- The Power of "Horizontal Curve" in Photoshop: [https://youtu.be/LfrerC80h84](https://youtu.be/LfrerC80h84)
Questions?

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