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What is affine transformation?

Affine transformation is a linear mapping method that preserves points, straight lines, and planes. Sets of parallel lines remain parallel after an affine transformation.

The affine transformation technique is typically used to correct for geometric distortions or deformations that occur with non-ideal camera angles. For example, satellite imagery uses affine transformations to correct for wide angle lens distortion, panorama stitching, and image registration. Transforming and fusing the images to a large, flat coordinate system is desirable to eliminate distortion. This enables easier interactions and calculations that don't require accounting for image distortion.

By using this, you can shift, rotate, scale the object on the canvas.

Human color visualization.

Humans have larger number of rods than cones.

Color naming

Even if there are different colors, they have the same name. It is because color naming is more of cultural result and therefore, there is no absolute value of color.

Discrete vs Continuous color

Even if the hue does not change, we can change the color grade. Those change can be seen as discrete (with distinct line) and continuous (without specific line)

Color creation.

By dividing values between 0 to 1, we can create color palette. For example, if we use `mgrid` function in Python, with the input of 0, 1, we can see the color variation.

Color blind.

We need to consider the audiences who are color blind. Therefore, it will be good choice to mix between the cones, like yellow, cyan, and magenta in making the visualization and adding colors on it.