CVD Filter

by Gary Pettie (Slightly Odd Games)

Thank you for importing the 'CVD Filter' into your project.

These post processing profiles are designed to help you to improve the readability of your in-game visuals for people with color vision deficiency (aka "color blindness").

This version of 'CVD Filter' is designed to be used with the built-in render pipeline using the post processing (v2) stack.
If you are using URP or HDRP, please download the alternative package from the asset store.

General Information

What is Color Vision Deficiency?

Color Vision Deficiency is more commonly referred to as color blindness.

The cone cells in our eyes are responsible for detecting color and are broken down into three types - Red, Green, and Blue.

When one or more of these types of cone cells are missing or defective a person experiences some form of CVD. If none of the cones function correctly then that person is truly "color blind".

Generally, CVD is grouped into three categories; red-green, blue-yellow, and achromatic.

Why should you care?

The most common form of CVD is, red-green, affecting around 8% of men and 0.5% women. That's a whole lot of potential players!

It's important to consider these players when creating your games, especially if color is used to identify key gameplay elements.

The provided post-processing filters help you see your game through the eyes of a player with various forms of CVD, allowing you to make better design decisions and extend the reach of your game.

Want to learn more?

Check out the following links for some interesting facts and statistics about CVD and color blindness.

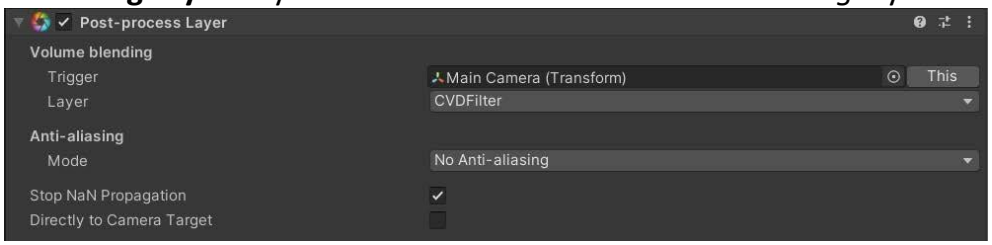
https://www.youtube.com/watch?v=xrqdU4cZaLw
https://nei.nih.gov/health/color_blindness/facts_about
http://www.color-blindness.com/2006/04/28/colorblind-population/
https://iristech.co/statistics/

Setup

1. Install Post Processing via the Package Manager.

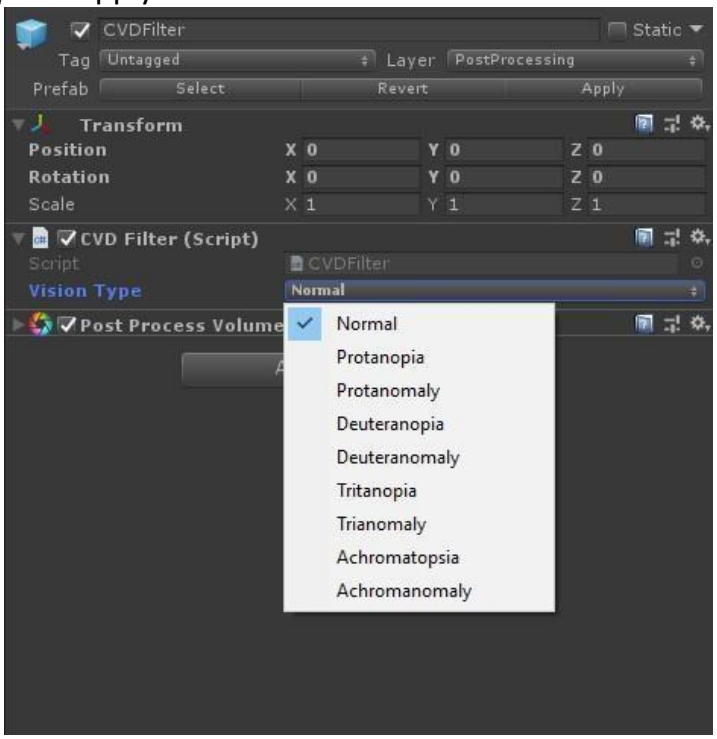
2. Add a new layer called "*CVDFilter*" to your project

3. Add a **Post Processing Layer** to your camera and set the *Volume Blending* layer to "*CVDFilter*"



4. Drag the **CVDFilter Prefab** into your scene

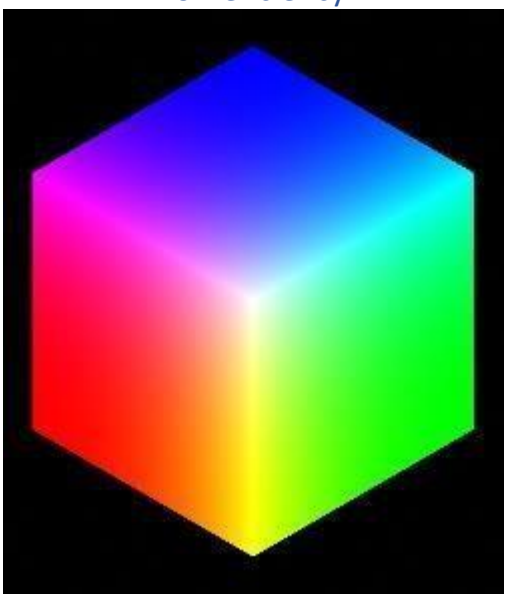
5. Change the *Vision Type* to apply the various filters in real time.



6. If you wish to apply the filter to UI elements, set the *Render Mode* to "Sceenspace – Camera".

Included Filters

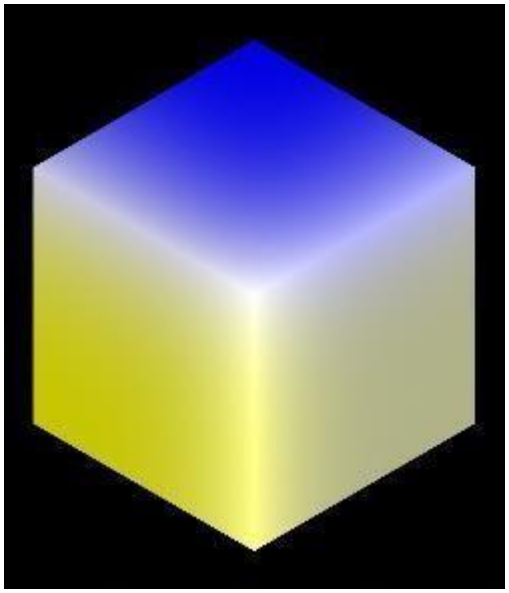
No Deficiency



Normal

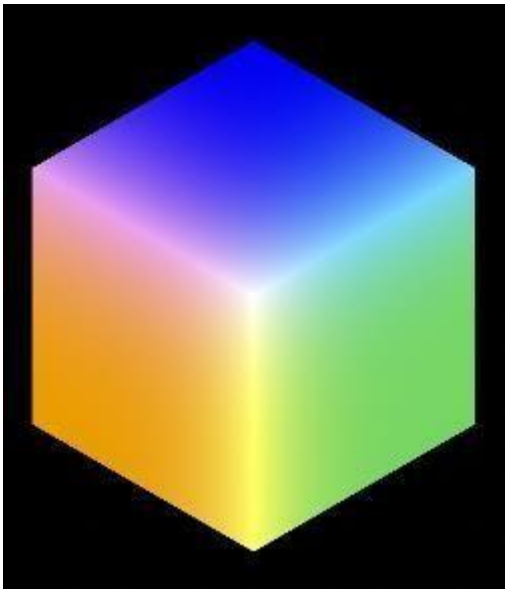
This filter applies no color correction, this is the default.

Red Deficient



Protanopia

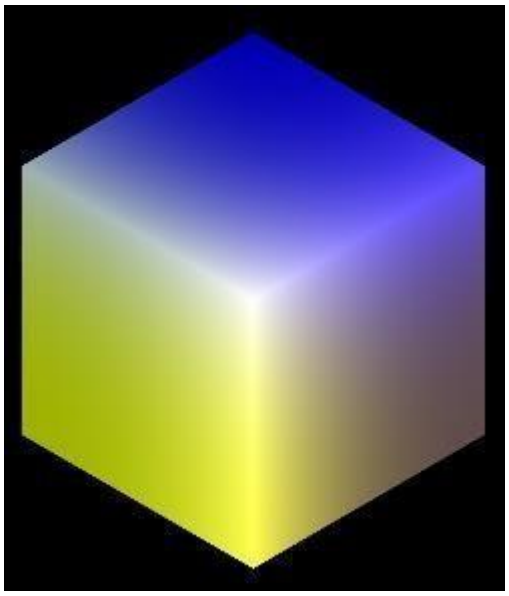
Simulates missing red cones



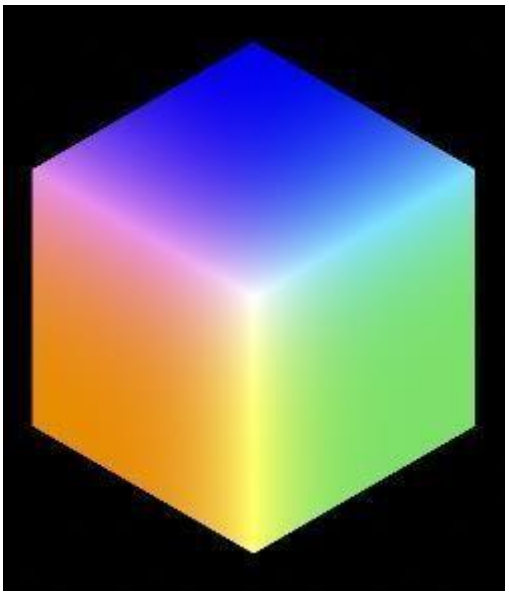
Protanomaly

Simulates reduced sensitivity red cones

Green Deficient

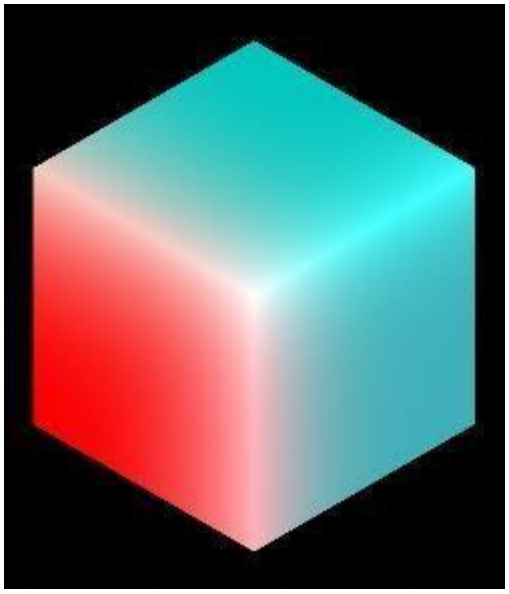


Deuteranopia
Simulates missing green cones

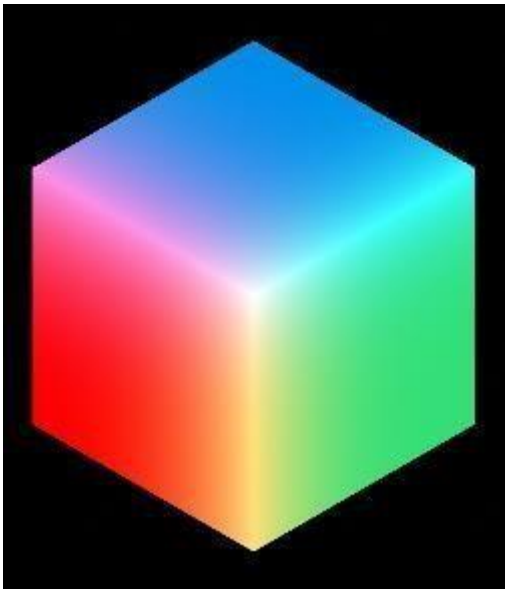


Deuteranomaly
Simulates reduced sensitivity green cones

Blue Deficient

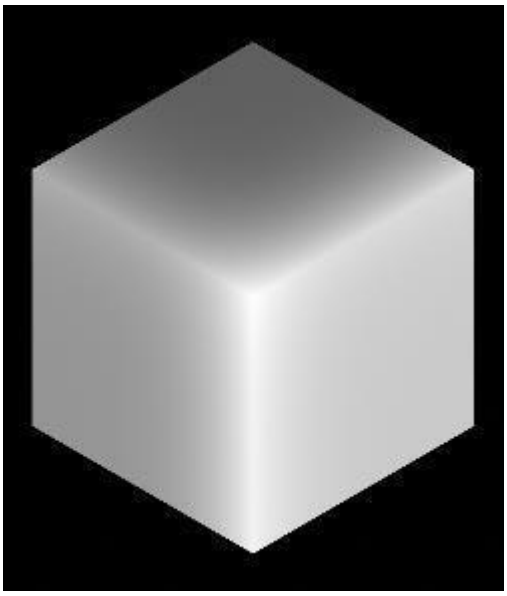


Tritanopia
Simulates missing blue cones

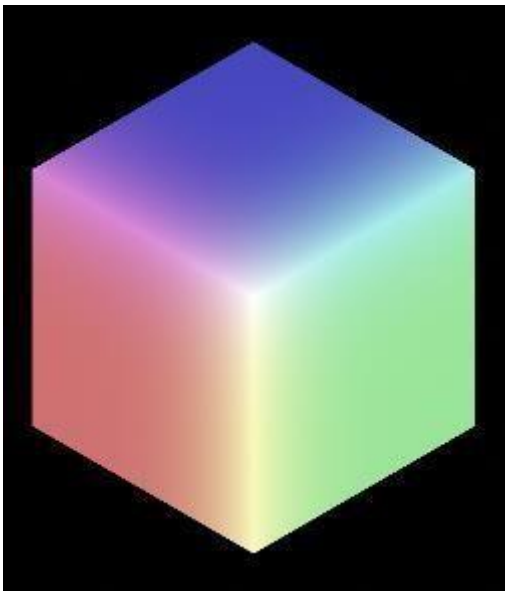


Tritanomaly
Simulates reduced sensitivity blue cones

All Deficient



Achromatopsia
Simulates completely missing cones (greyscale)



Achromatomaly
Simulates reduced sensitivity of all cones

Note: There are also forms of CVD where two cones can be missing or defective, this is called monochromacy and is incredibly rare. Filters for these conditions are not currently included in this collection. However, you can simulate the effect using the Achromatopsia filter.

Other Stuff

This asset is distributed for free via the Unity Asset store. If you found it somewhere else then please let me know - especially if someone tried to charge you for it!

If you found this asset helpful, tell your friends and link them to the Unity Asset Store page. The more developers thinking about this sort of thing the better!

I also accept donations on Ko-Fi to help support the continued development of this asset. All donations are appreciated but not expected, so please do not feel obligated!

Support me on Ko-fi

Contact Us:
SlightlyOddGamesUK@gmail.com