

HW 1: Part D
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Into the Spider-Verse

The visual effect(s) I chose are from the movie *Into the Spider-verse*. The style of the animation is based on comicbook style, so it is more graphic than realistic. On top of that, the style of shading and lighting make each frame look like it is hand drawn. I really like this effect, because it's very different than other animated movies.

If you look at the screenshot, everything in the scene looks like it was hand painted because of the brush stroke effect. Even though the scene is almost realistic, the hard shadows of objects give it a graphic effect. "Hard" meaning there is no blurring between two color values to indicate shadows, but rather a painted blend effect that maintains the lines between values. There's also a texture with the dots in some places, this kind of mimics comic book style print with dots in order to indicate some shading.

In order to achieve the effect of print, the visual effects team created a sort of visual language. They developed a bunch of shaders to simulate simple planes at render time. This is to simplify complex shapes. This would be most similar to Unity's toon shader. This already creates a graphic look and feel. However, they added more to create the hand drawn effect. The next step they did was to write tools to create brush strokes based on renderer's output. They also created a tool to create line art to stylize 3d objects. This would be similar to this Unity edge detection shader: (<https://halisavakis.com/my-take-on-shaders-edge-detection-image-effect/>)