



The use of colour and outline in *Spiderman: Into the Spider-Verse* reflects many aspects of historical media as many traditional techniques are echoed with the film's new digital interpretation of Spiderman. In regards to colour, the chromatic aberration of the neon lights and distant figures is reminiscent of old-school stereoscopic colours of offset red and blue used to display pseudo-3D graphics, which ties in thematically to the colours of Spiderman's suit. In addition, the CMYK colours and halftone shapes used in the details of the shading also call back to traditional offset printing of comic books and how misalignments in the printing canvas would create similar colour shapes on paper. Lastly, the hand-drawn strokes on each character also echo the stylistic themes of the comics upon which the movie is based.

Through several interviews and documentaries, it was revealed that the colour effects are visualised through post-processing of the rendered models. After adding the colours for the silhouettes of the background, any additional halftoning/shading was added along with comic-style interjections. In addition, the stroked outlines are then generated by an ML algorithm that map to the contours of each figure's facial structures, which is then corrected by a technical artist. Following those layers, the images were then finally then hand-drawn over by a 2D animator to complete the shots.

In regards to how these effects could potentially be recreated with shaders: the colour offset could be emulated with a DOF effect that adjust the colours of a shape based on distance from camera, something similar to the outlines could be generated with hull outlines and the halftone shading is possible through manipulating a lighting fragment shader to draw circles instead of interpolating light values.