

animAIté



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Dataset

Giphy is an online database and search engine that allows users to search for and share short looping videos with no sound, that resemble animated GIF files. Categories of GIFs range from entertainment, to memes, to artistic imagery and animations.

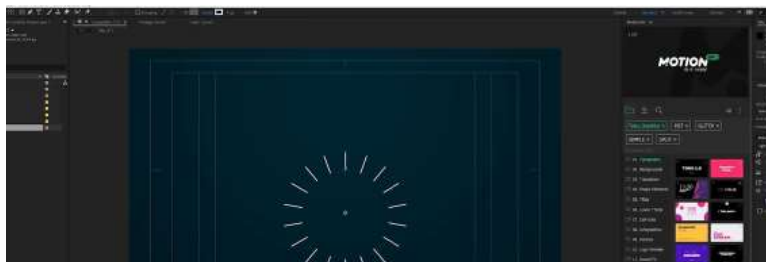
Given the wide range of image styles available in the dataset, **animAite** uses only simple motion graphics to train its model. This produces a more controlled output that can have stylistic consistency amongst all final products.



Goals

In order to create simple motion graphics like the images to the right, artists must draw frame by frame in order to develop a smooth animation. Hundred of drawings could go into a single ten-second GIF. Many artists use software like Adobe After Effects, drawing geometric patterns and dictating the paths that moving shapes will follow.

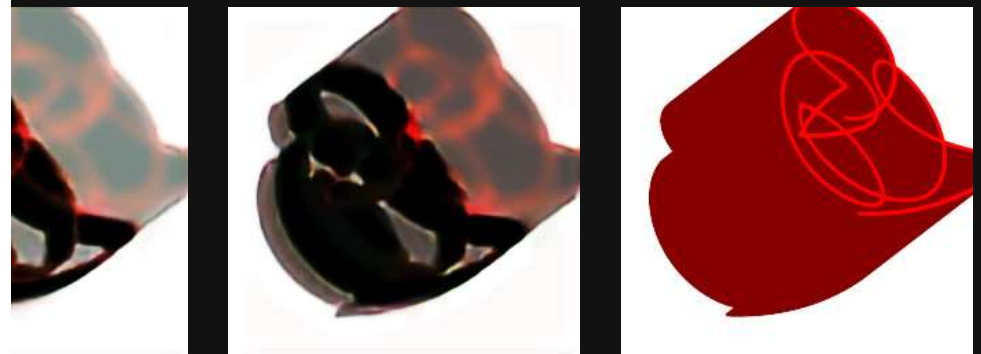
animAite aims to simplify the process by which artists and animators can work. Instead of drawing all the frames that compose an animation, artists can input the beginning frame and ending frame of their animation. Our machine learning model is able to interpolate a series of frames between the inputs after training on tens of thousands of motion graphic GIFs from GIPHY. **animAite** performs as a creative tool to make animation easier and can produce unexpected results.



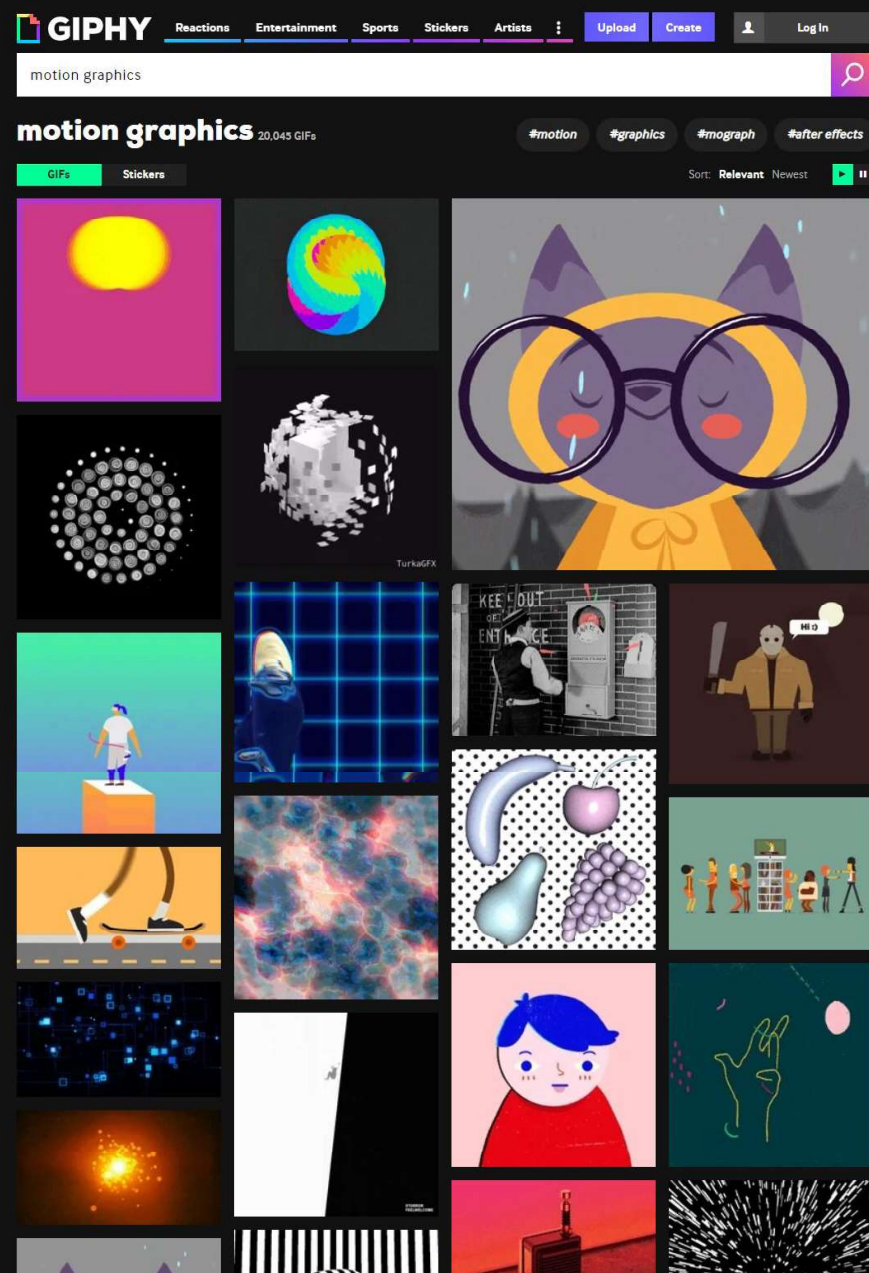
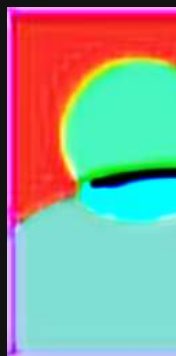
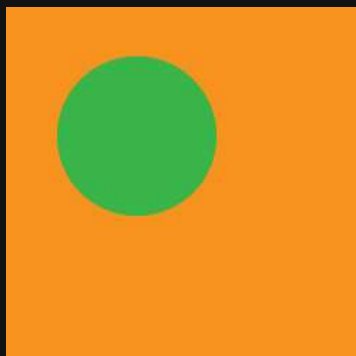
Input



Input



Input



GIPHY API

GIPHY has an API available for developers to use. The API is able to scrape any number of GIFs from GIPHY that is specified. **animAite** utilized 20,000 GIFs in order to train. To keep the final imagery consistent a set of tags was targeted by the API, which excluded certain tags that may skew results. Photorealistic images may train the model incorrectly, so tags like animals, babies, trippy images, stop motions, and movie titles were disincluded from the training set.

Precedent Model

The model that we based **animAite** on addresses the issue of generating a new image from two existing images. A middle frame is created from two frames of a video through interpolation or the subsequent frame through extrapolation. This model combines the strengths of traditional optical-flow-based solutions with those of generative convolutional neural networks into a technique that the authors call Deep Voxel Flow. The model is unsupervised, and virtually any video can be used to train the deep neural network. To perform tasks such as smoothing out a video, it divides the video into groups of two frames and interpolates the frame in between, effectively increasing the frame rate.

animAite Model Architecture

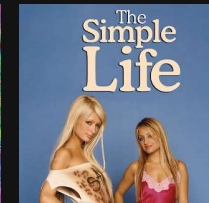
Since the original model was made for applications such as smoothing out video frames, we had to adapt it to be able to use it with gifs. Instead of putting in a video and extrapolating the frames in between groups of two frames, we used gifs scraped from GIPHY and took individual frames from each gif. Using the two input images to interpolate a generated frame, the model creates more frames by feeding in the generated image as an input along with one of the original frames, and so on. The final product is a gif created from the generated frames sandwiched between the two original images.



Animals: NO



Trippy: NO



Paris Hilton: NO



Simple: YES

