

COSC 3P98 Final Project

Cruisin' in the 80's

Connor Vrieswyk

Tools Used: Blender, Sony Vegas

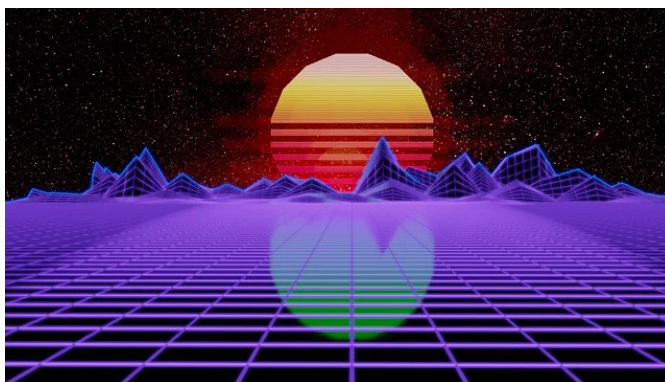
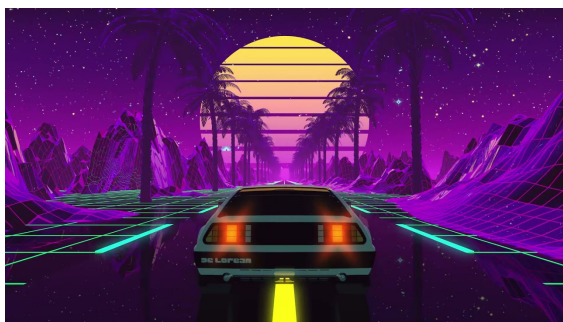
Video Link: [Cruisin' In the 80's.mp4](#)

Overview

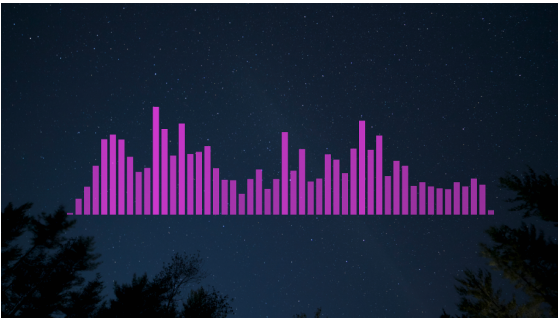
"Cruisin' in the 80's" is a music themed animation inspired by the synthwave genre of music and visual style. The project was modelled in Blender and post production was done in Sony Vegas. The goal of this animation was to capture the feelings invoked by the synthwave aesthetic and to give a visual display of the music. This was my first time using a 3D animation software. As such, I used a few video tutorials as reference while creating this animation. These videos as well as the models used are linked in the "References" section below.

Inspiration & Planning

The main inspiration for this project is the synthwave style. Synthwave is an electronic music genre heavily inspired by the music and culture of the 1980's and has a very nostalgic or dreamlike feel. It also draws a lot of inspiration from the video games and art styles of the era. I listen to synthwave a lot in my spare time and grew up listening to a lot of 1980's music, so I was excited to create an animation in this style. Below are some reference images that show some of synthwave's reoccurring characteristics.



There wasn't much pre-planning done for this animation. I knew I wanted to create a synthwave style landscape and the animation would feature a 1980's style car. However, I also wanted to include a synthwave song in the animation and have some form of visual representation of the music. I decided to include a bar style music visualizer, similar to the one shown below, that would show the different frequencies of the music.



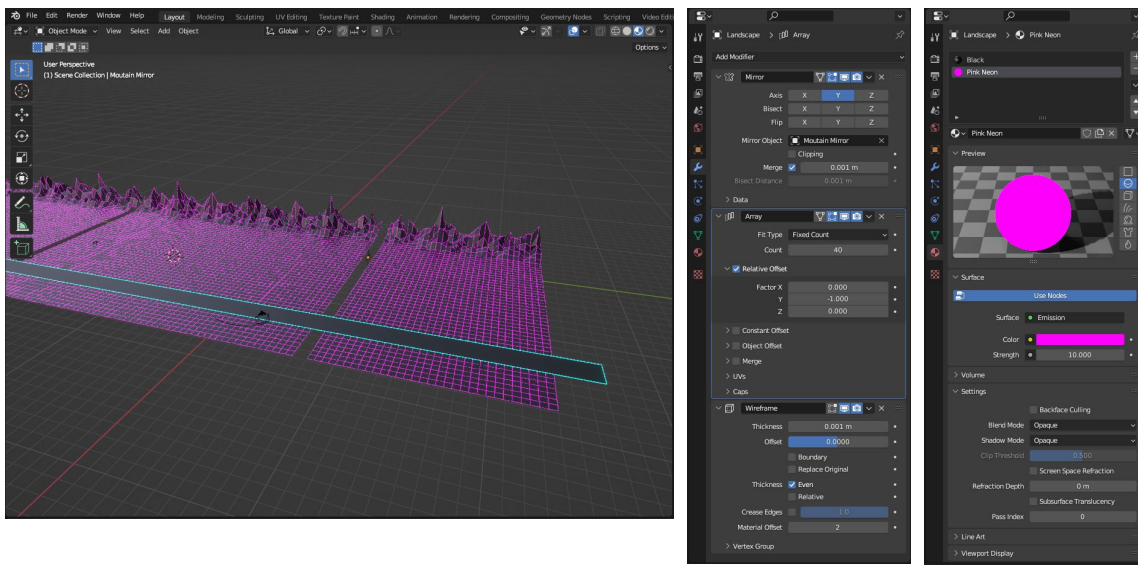
The combination of these two features led to the following simple sketch of the animation concept. The car would be a focal point of the animation, as well as the animated bars in the background that moved according to the music of the song. The background would be a typical synthwave landscape with polygonal mountains, palm trees, and the iconic synthwave sunset. The final animation, also shown below more or less executed upon this initial idea.



Landscape

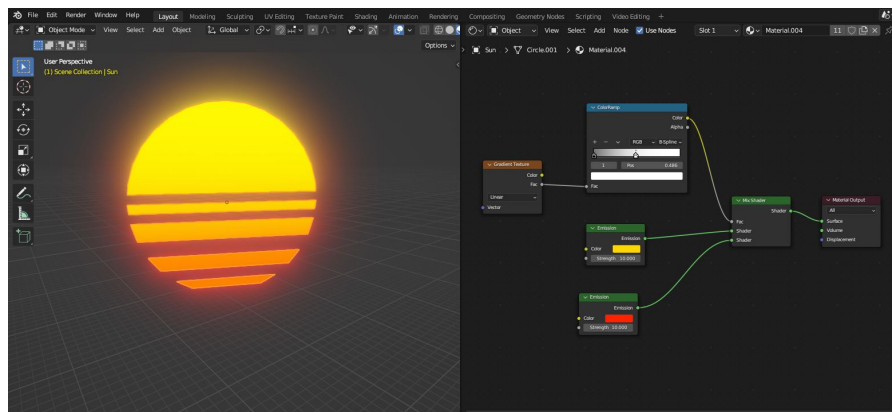
Mountains & Road

The first component I created for the project is the polygonal landscape that makes up the background of the animation. It is a simple plane mesh that has been separated into a grid and has some vertices extruded to create the mountains background. The texturing is a simple black metallic material and a magenta emission material. The landscaped is mirrored over and empty object and repeated using a mirror and array modifier to generate the length of the scene shown throughout the animation. This meant I only needed to model a small part of the landscape and then have the rest generate for me. The combination of these modifiers also kept the landscape from having any noticeable repeating patterns. The landscape also has a wireframe modifier, which is given the magenta emission material to create the polygonal pattern. The road is also a simple plane mesh with a similar wireframe modifier and cyan emission material. The road is stretched across the length of the track to keep the middle smooth, as the array would add unwanted lines in the middle. The scene also has no global or local lights. This means the only sources of light come from the emission materials, which gives the scene a nice glowing or neon style.



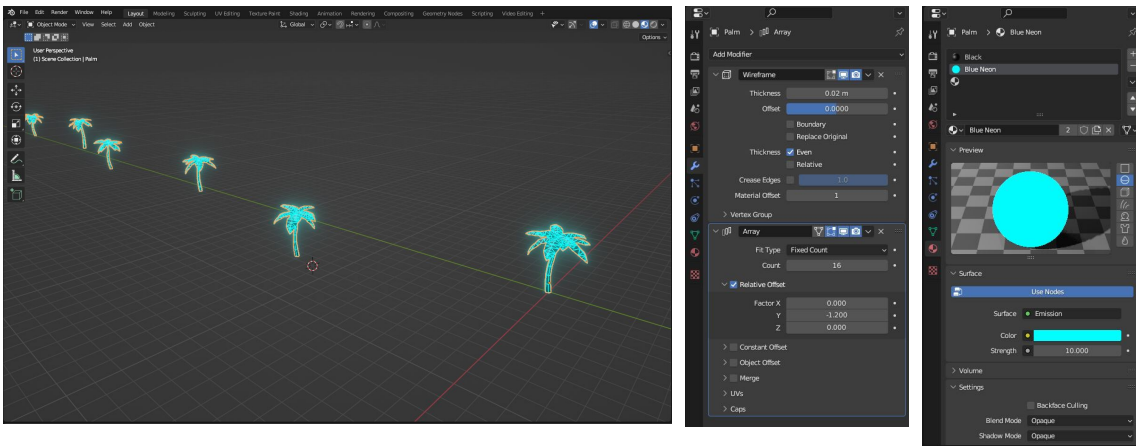
Sun

The iconic synthwave sun is made out of a simple circle mesh with a few manual cuts made to create the bars on the lower portion. It is very large and sits above and behind the scene. I chose to model the sun because I wanted it to function as an actual light source in the scene. This is done with a mix shader to give it a nice colour gradient while still being an emission material.



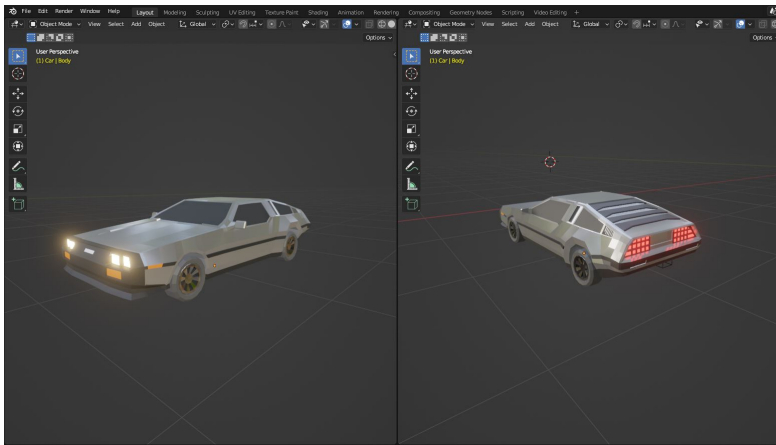
Palm Trees

The palm trees are made in a similarly fashion to the mountains. A few of them are manually placed in the scene at varying angles and heights and then repeated across the length of the scene with the use of the array modifier. They are also materiald the same way, with a black base and a wireframe modifier given a cyan emission material. The tree model was also edited slightly to remove a few excess vertices to give it a cleaner wireframe material.

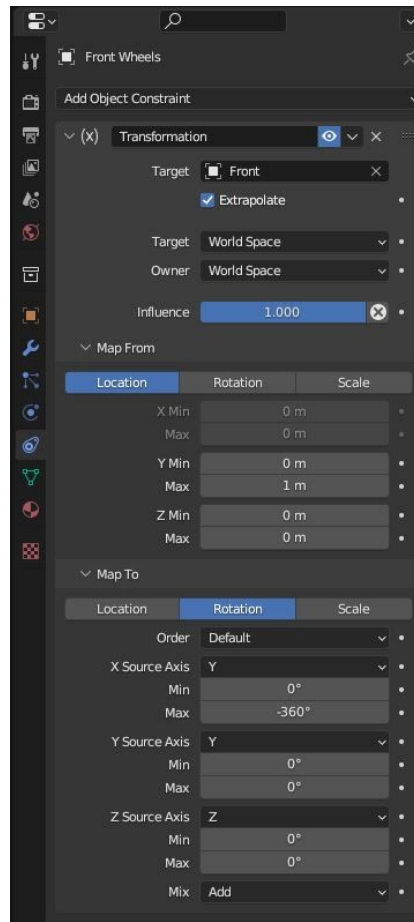


Car

Vehicles, cars in particular, are a prominent component of the synthwave style, so I knew I needed to include one in my animation. The car model I used for this animation is a low-poly version of the DMC DeLorean, a very popular car in 1980's culture. It has a very reflective metallic chrome material that reflects the emissive lights of the other objects in the scene. It also has its own emissive materials for the front and rear headlights. The low-poly model was a stylistic choice, as it keeps in line with the "retro video-game" themes of synthwave. The model has largest verity of materials compared to all the other objects used for this animation and is also the most complex model. Like the palm trees, the model was also cleaned up to remove excess vertices and a few other changes were made to make the model closer resemble the original car, such as the additions of the the orange turn signals and the black stripe across the side. The wheels were also changed to have a non reflective material in the grooves, which made it easier to see their rotation and improved the overall look.

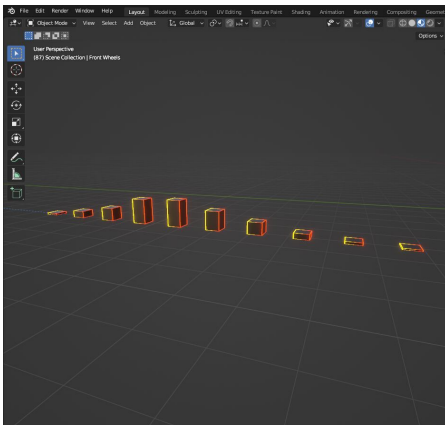


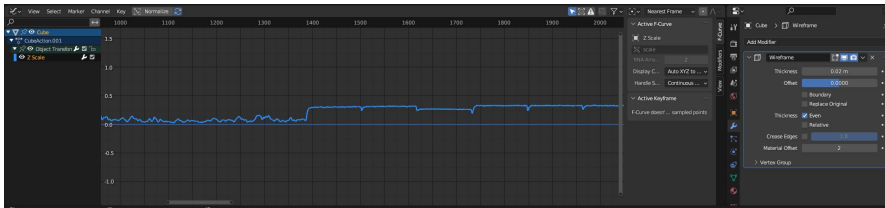
The rotation of wheels was done procedurally using object constraints. Empty objects surround the front and back wheels and act as parents to the wheel models. Using a transformation constraint, location changes on the empty objects are translated into rotation changes on the wheel models. This means that when the empty objects are moved forward down the road, the wheels will rotate according. Also, since the empty objects are parents to the wheels, the wheels are also moved forward. This made animating the car very simple and also ensured that the wheels rotated at the correct speed.



Visualizer Bars

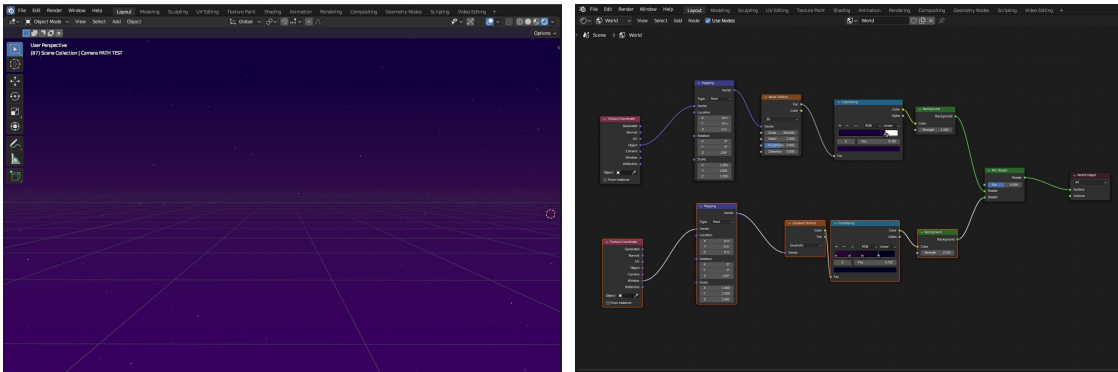
The next important component of the animation is visually displaying the music. This was done using a set of bars that move in time with the music. Each visualizer bar is a basic cube mesh that reuses the black material from the ground and trees and reuses the sun's emissive material for the wireframe. Similarly to the wheels of the car, animating each bar to move in time with the music by hand would have been very difficult and tedious. So, I used frequency curves instead. This feature lets you upload a sound file and specify a particular frequency region to listen to. Blender then translates this frequency into a graph that can be used for animation. I mapped this graph to scale the bar along the z axis, giving it an accurate movement to the beats of the song.





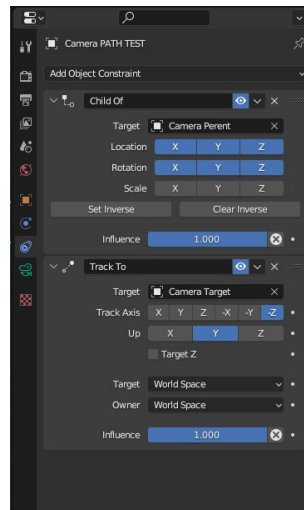
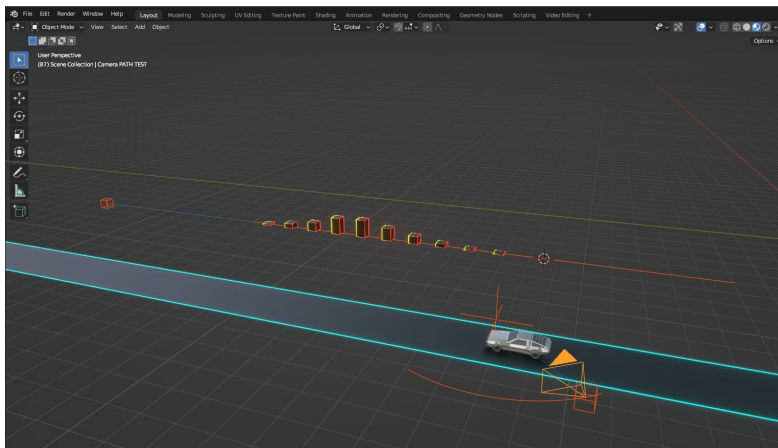
Skybox

The last component of the animation is the skybox. A typical synthwave sky is often deep blue or purple with stars. This gives it a very pretty "just after sunset" look that combines the colours of a sunset with the stars of the night sky. To replicate this style for my animation I used a mix shader. I combined a noise texture with a low roughness value which resulted in a starlike pattern with a gradient texture to give it the "just after sunset" colour. This skybox texture tied the look of the animation together and made it really reflect the synthwave style.

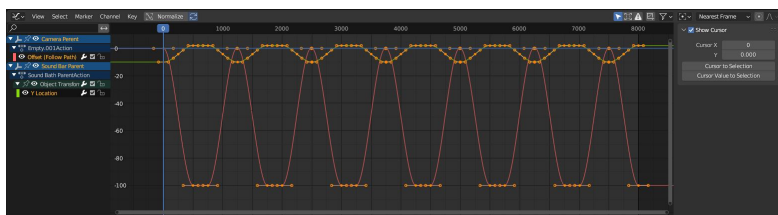


Camera & Movement

The animation process started with the basic movement of the object in the scene. A single keyframe at the beginning and the end of the road was all that was needed to animate general movement of the car, sun, and visualizer bars. Blender is then able to interpret the movement of the objects between these two frames. Linear interpolation was best for this as it meant the objects would travel down the road at a constant speed. For the camera panning, I used an empty object to parent the camera base to a path curve. The camera is animated to travel along this curve. This was done using bezier-curve interpolation, giving it a smoother ease in and out motion. The camera also has a tracking constraint to another empty object placed just in front of the car. This constraint keeps the camera facing a fixed point as it moves.

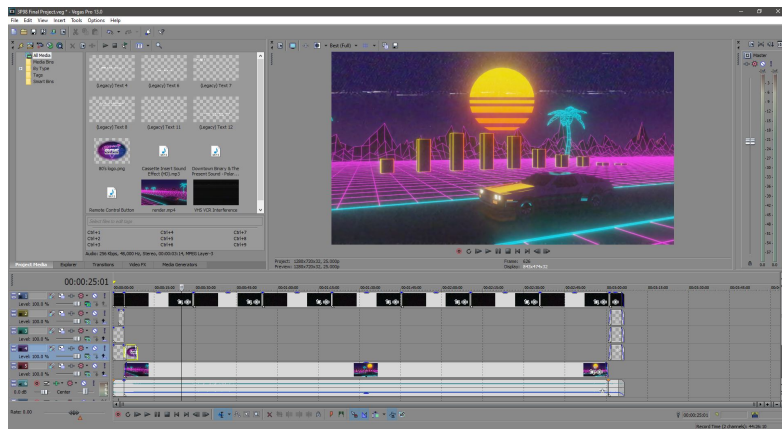


The movement of the visualizer bars is similar to the camera. An empty object is used to parent each bar to another path curve. This empty is animated to travel back and forth along this path to keep the bars in the centre of the camera frame. By positioning the camera at the beginning and the end of its path and ensuring that all the bars are in the centre of the frame at those two points, Blender can interpret the rest of movements on its own again using a bezier-curve interpolation to keep the bars in the centre of the camera frame for the entire duration of the animation. Below is the graph of the movements of both the camera and bar's paths.



Rendering & Post Production

The project was rendered in Blenders Eevee engine and took around an hour and a half to finish. Editing was then done in Sony Vegas to combine the music and animation. I also chose to enhance the retro feel of the animation by adding a VHS style filter. I then added a short intro and credits sequence in the same style. I found the VHS filter on Youtube and I created the 80's style logo on a free software online which is linked below in the "References" section.



References

Song: "Polaris" by Dntown Binary & The Present Sound -

<https://downtownbinary.bandcamp.com/track/polaris>

Car Model: "Delorean (Low Poly)" (<https://skfb.ly/6SDL8>) by Jamie Blacknell is licensed under Creative Commons Attribution (<http://creativecommons.org/licenses/by/4.0/>)

Tree Model: "Tree Palm" (<https://skfb.ly/6X6K9>) by 78Star.Productions is licensed under Creative Commons Attribution (<http://creativecommons.org/licenses/by/4.0/>).

80's Style Logo: <https://photofunia.com/effects/retro-wave>

Video Links:

<https://www.youtube.com/watch?v=hnLsktA4gmY>

<https://www.youtube.com/watch?v=5qN2CfVjwRg>

<https://www.youtube.com/watch?v=GS2NBrdXn8>

<https://www.youtube.com/watch?v=DuzdO5ENAvY>

https://www.youtube.com/watch?v=SYDTGUxM_is

<https://www.youtube.com/watch?v=LeYUk3Ob5W8>

<https://www.youtube.com/watch?v=6zoJavBcU5o>