



VFX Fundamentals Work

Blog link:

<https://21003595.myblog.arts.ac.uk/>

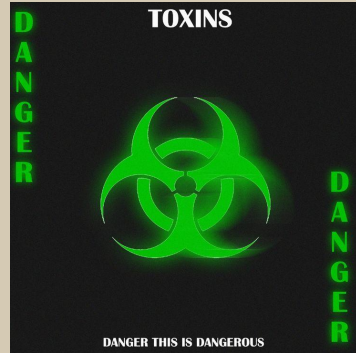


1. VFX Fundamentals pre-project ideas

I want to design a wasteland style themed main asset and environment, drawing inspiration primarily from Borderlands and Mad Max. The goal of this project is to improve my modeling skills, as well as my abilities in environment building and integrating visual effects

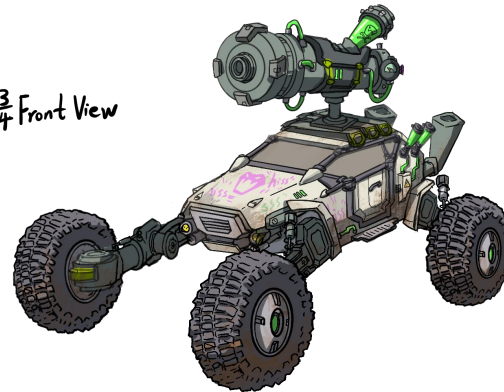
Design Sketch 1 — Wasteland Venom Off-Road Vehicle

Reference

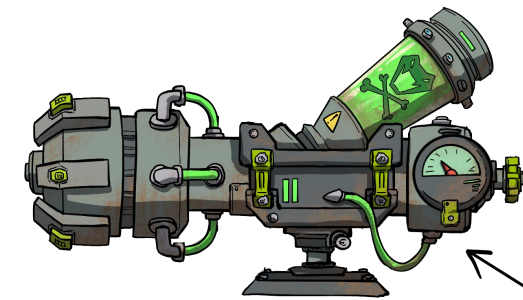
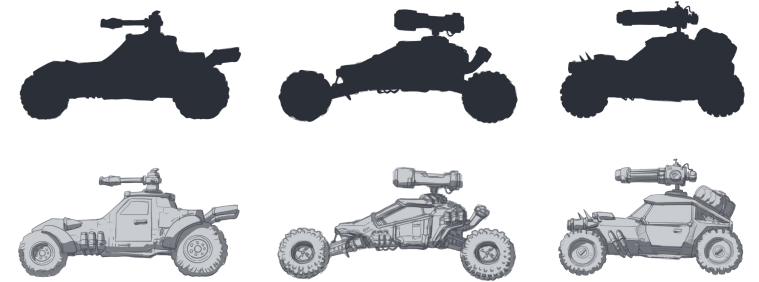
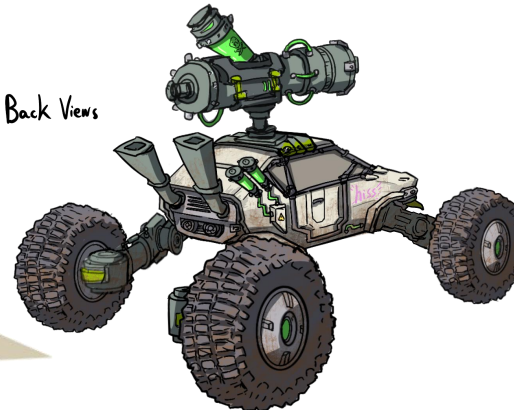


My 2D design

$\frac{3}{4}$ Front View

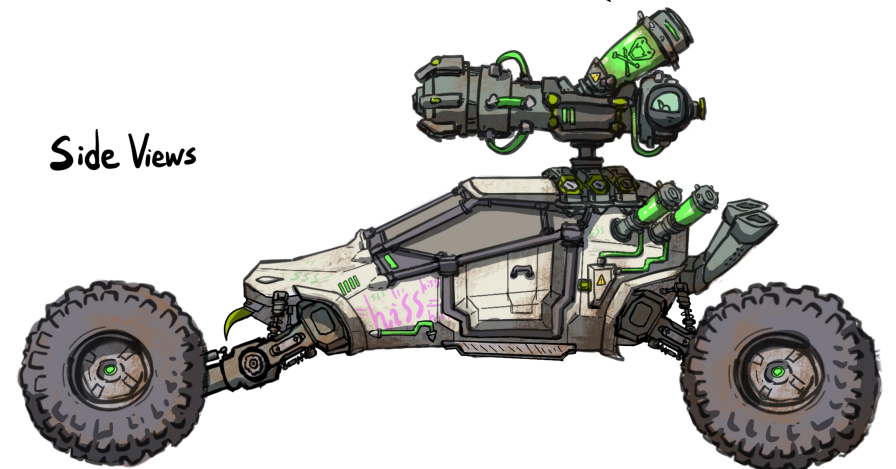


$\frac{3}{4}$ Back Views



Toxic Fog Cannon
Detail illustration

Side Views

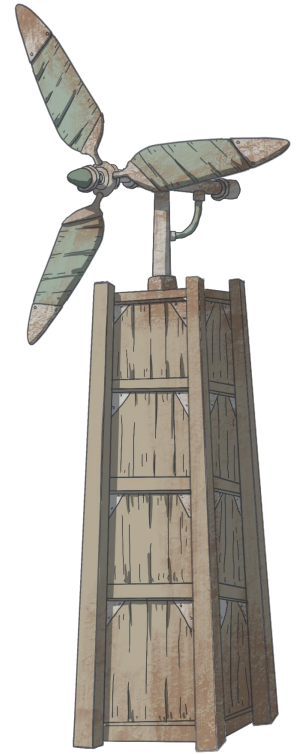


Design Sketch 2 — Wasteland Windmill

Reference



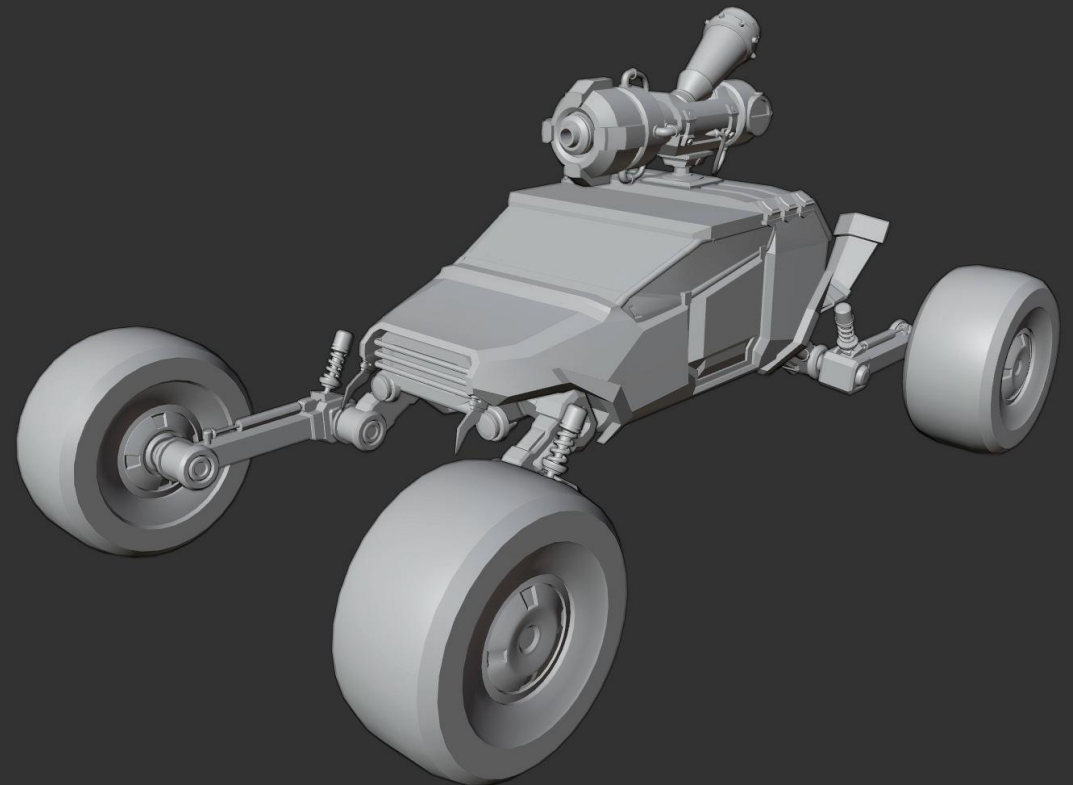
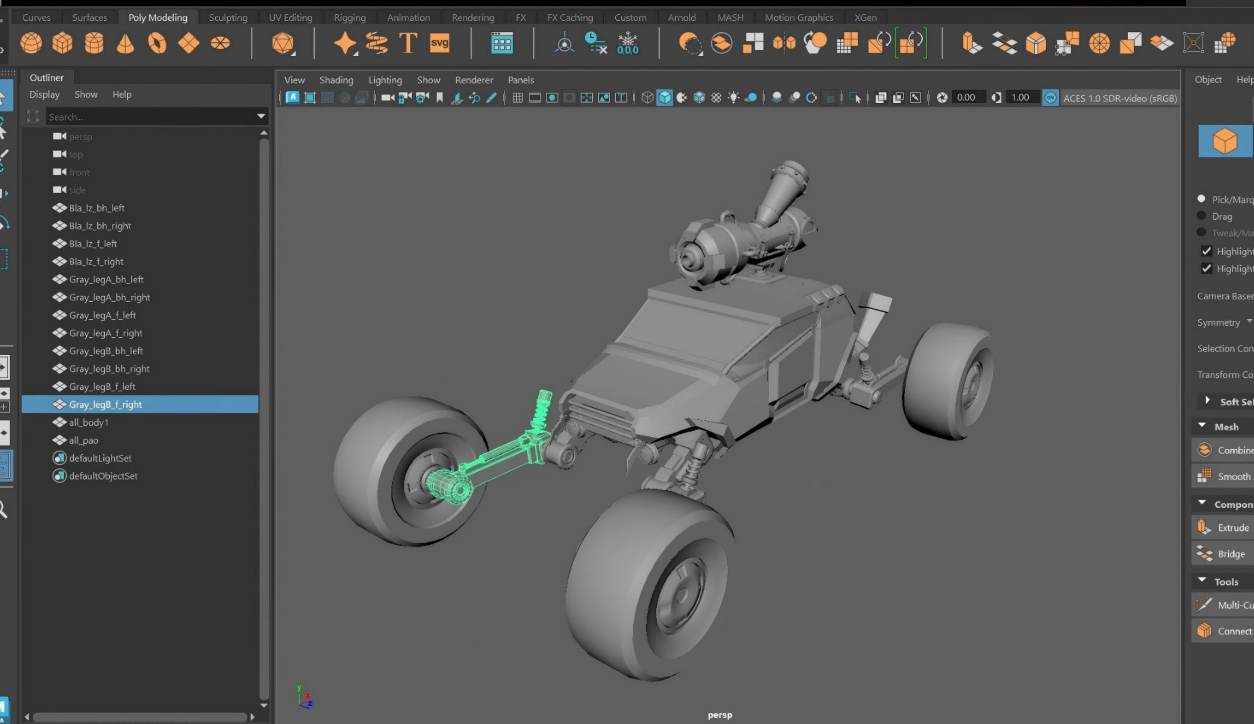
My 2D design



My 3D modeling

#1 Wasteland Venom Off-Road Vehicle

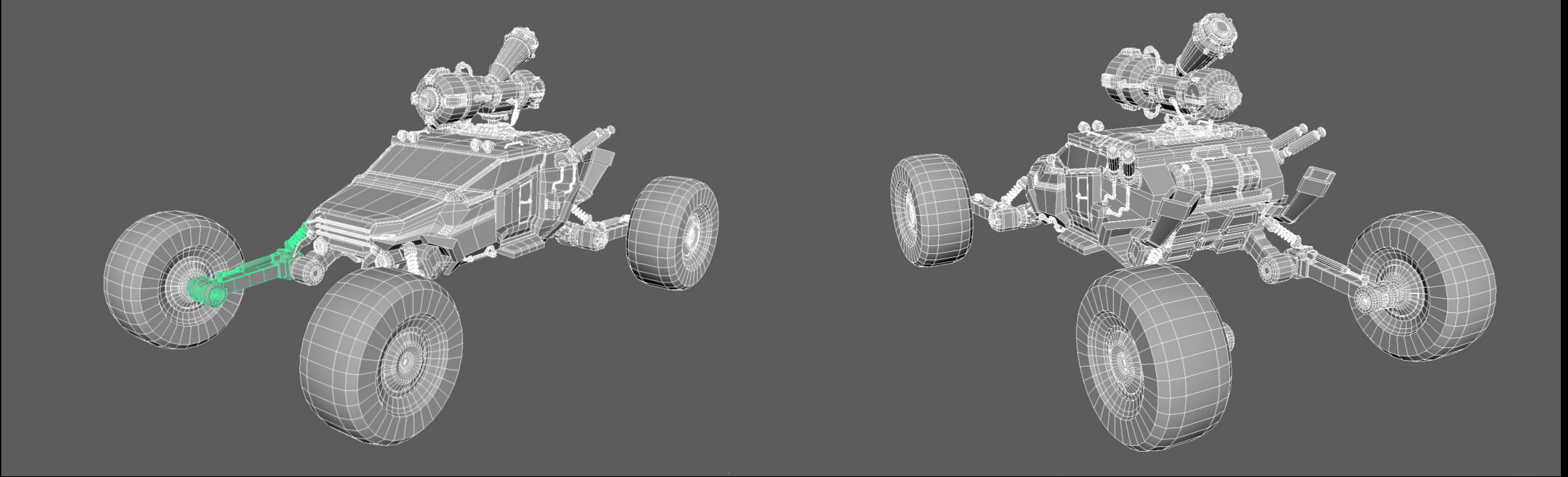
I am modeling the off-road vehicle. I've finished some of the main parts, but there are still many details that need to be refined. At the same time, I'm trying to separate the model into several parts—such as the body, front wheels, and rear wheels—to prepare for the rigging process.



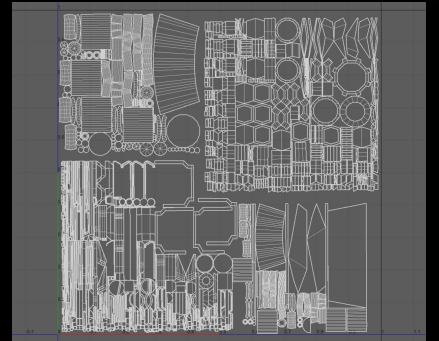
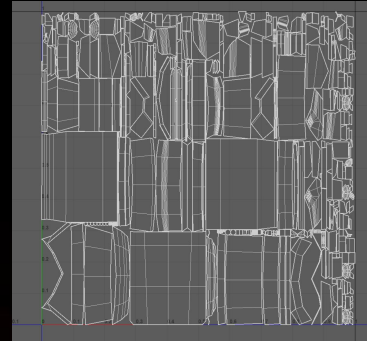
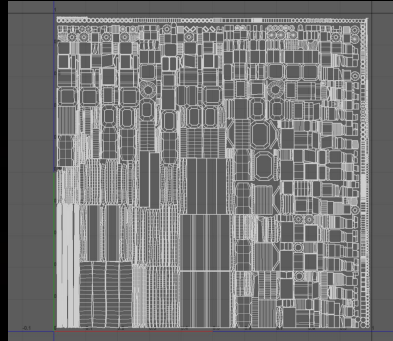
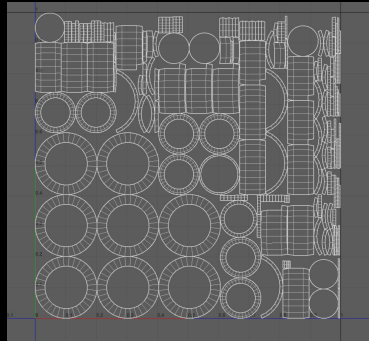
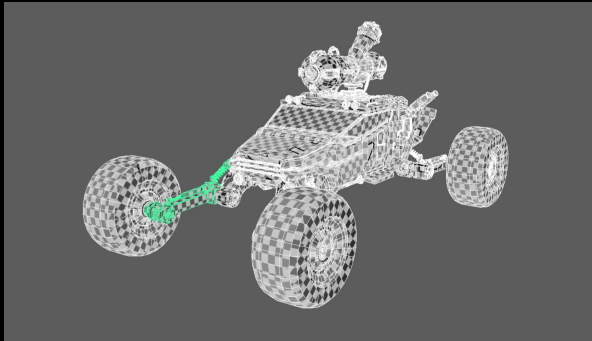
Final Low Model

I added many details and modeled the car's structure using as few polygons as possible. This model serves as the low-poly version, with UVs unwrapped, while more complex parts are left for the high-poly model. (Since material data is projected from the high-poly model onto the low-poly model, the low-poly mesh requires clean and precise topology, while the high-poly does not.)

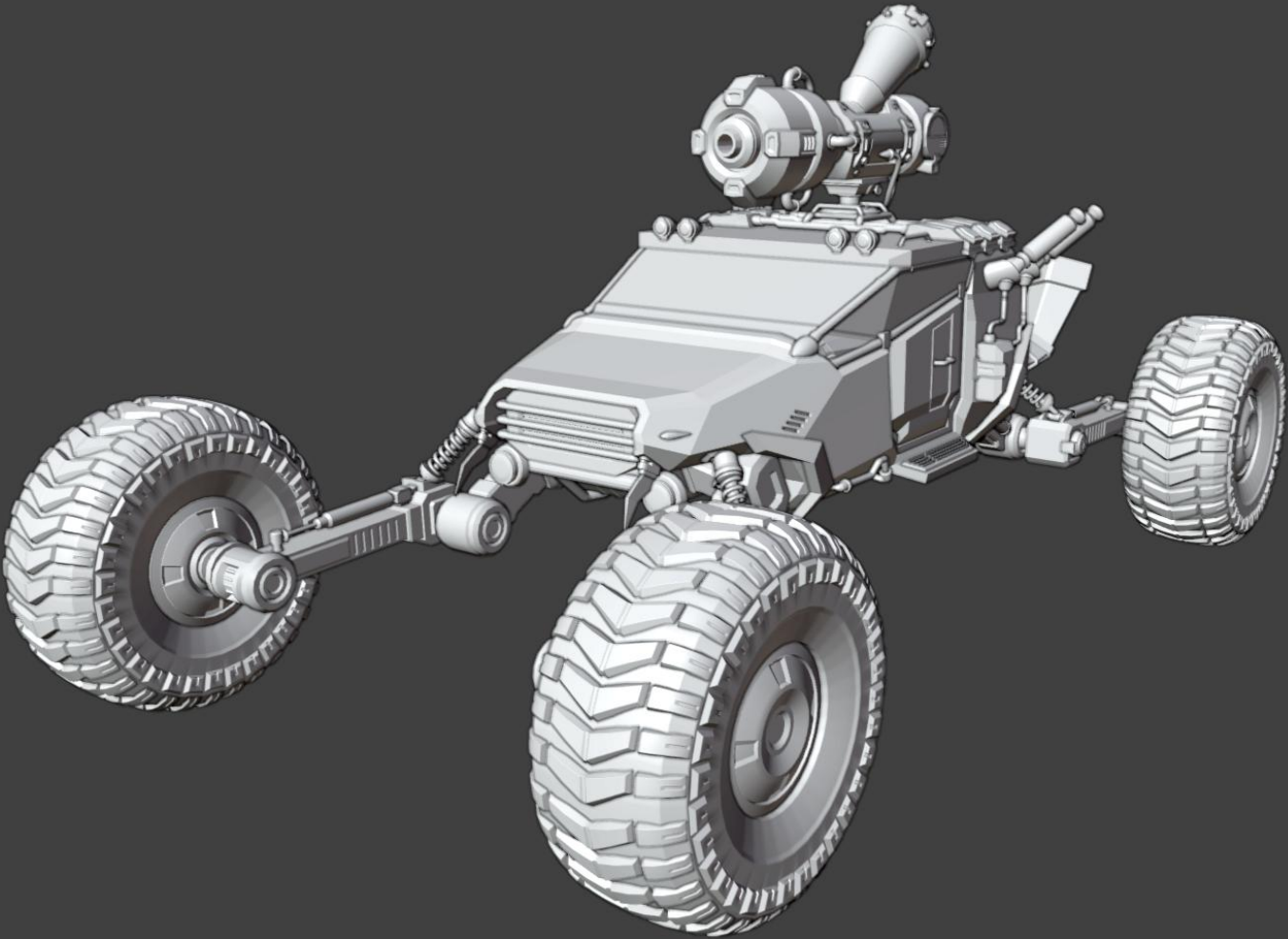
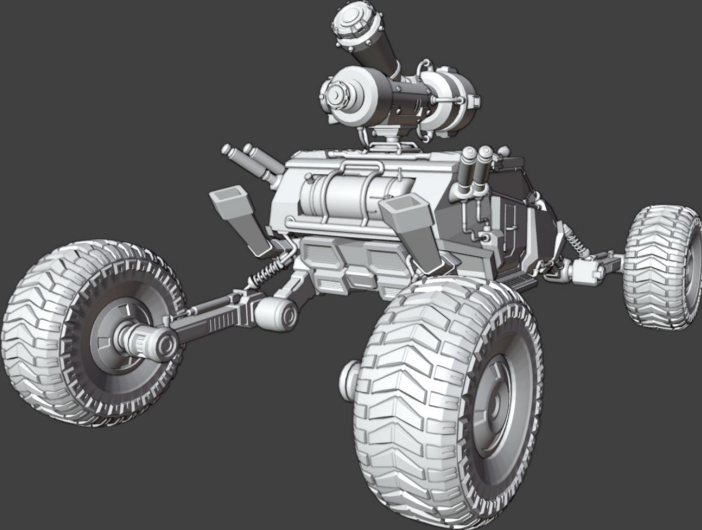
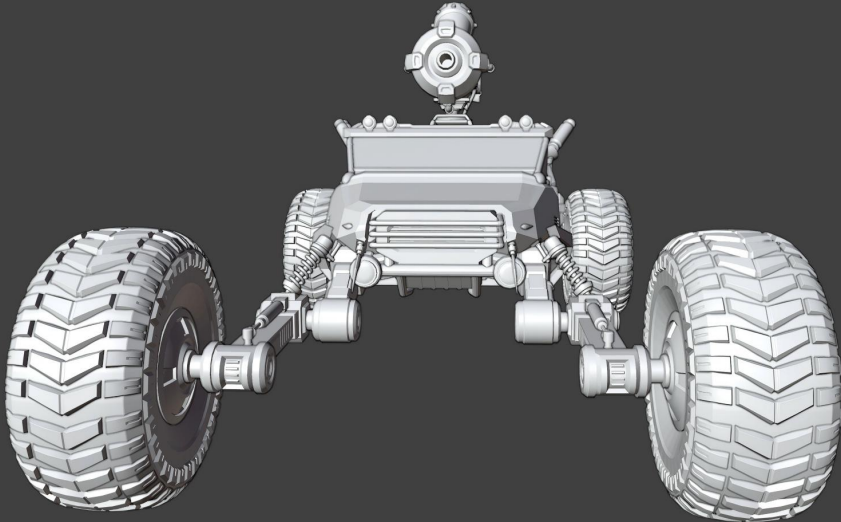
WireframeTopology



Hierarchy and UV Layout

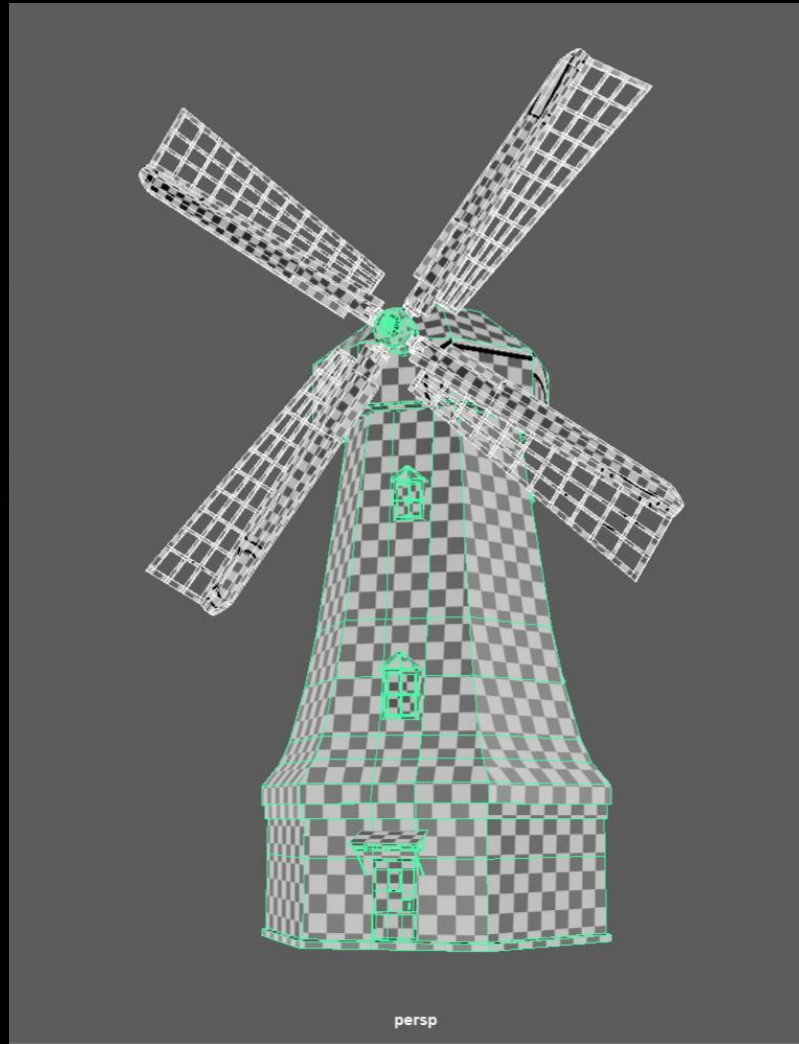
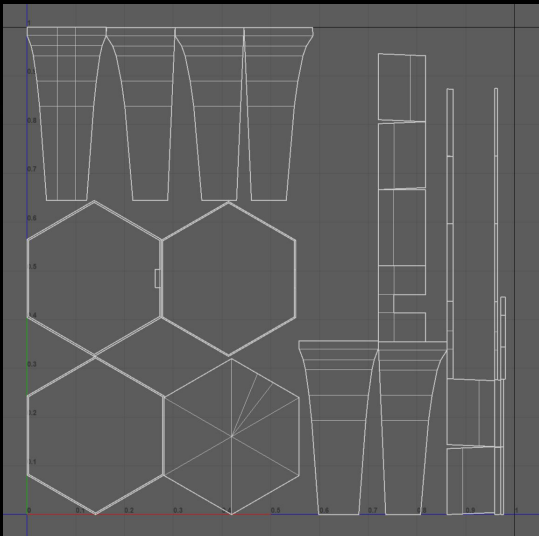
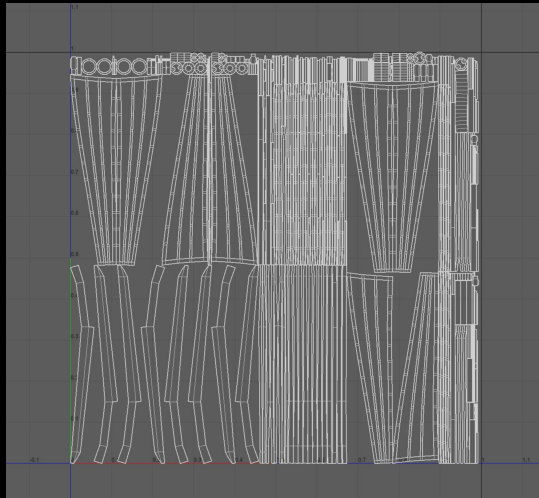


High-Poly Model Showcase

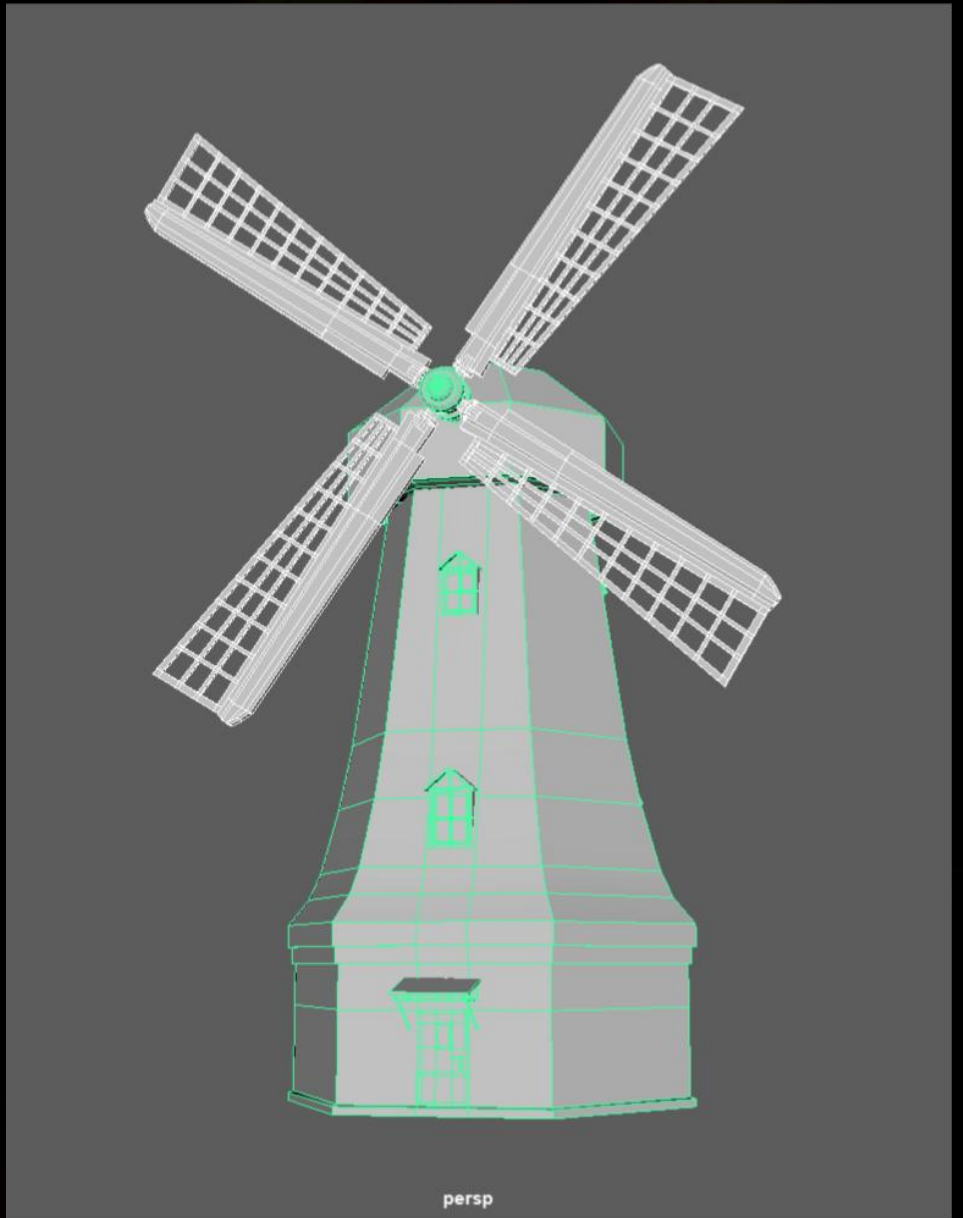


#2 Wasteland Windmill

Hierarchy and UV Layout

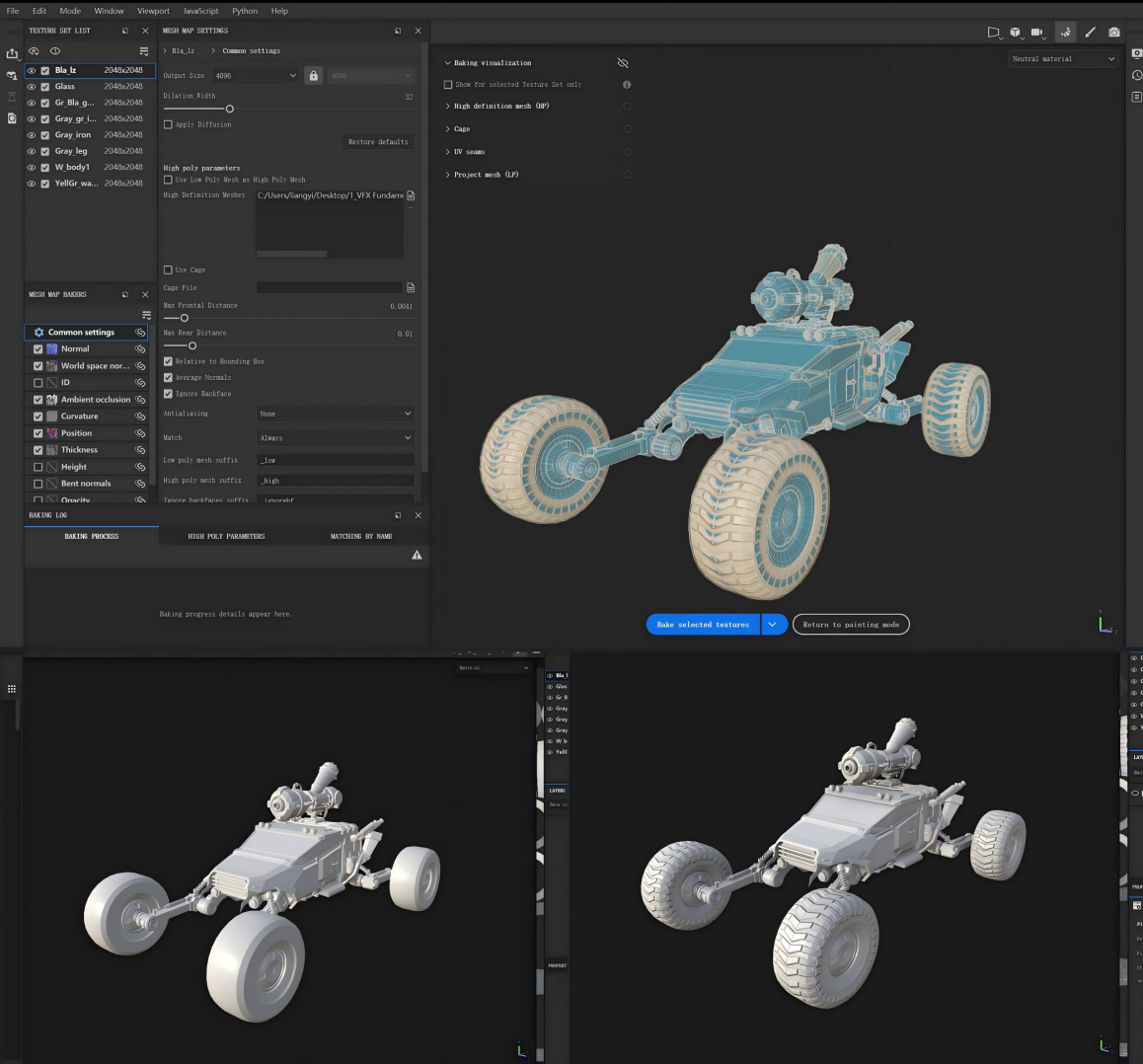


WireframeTopology



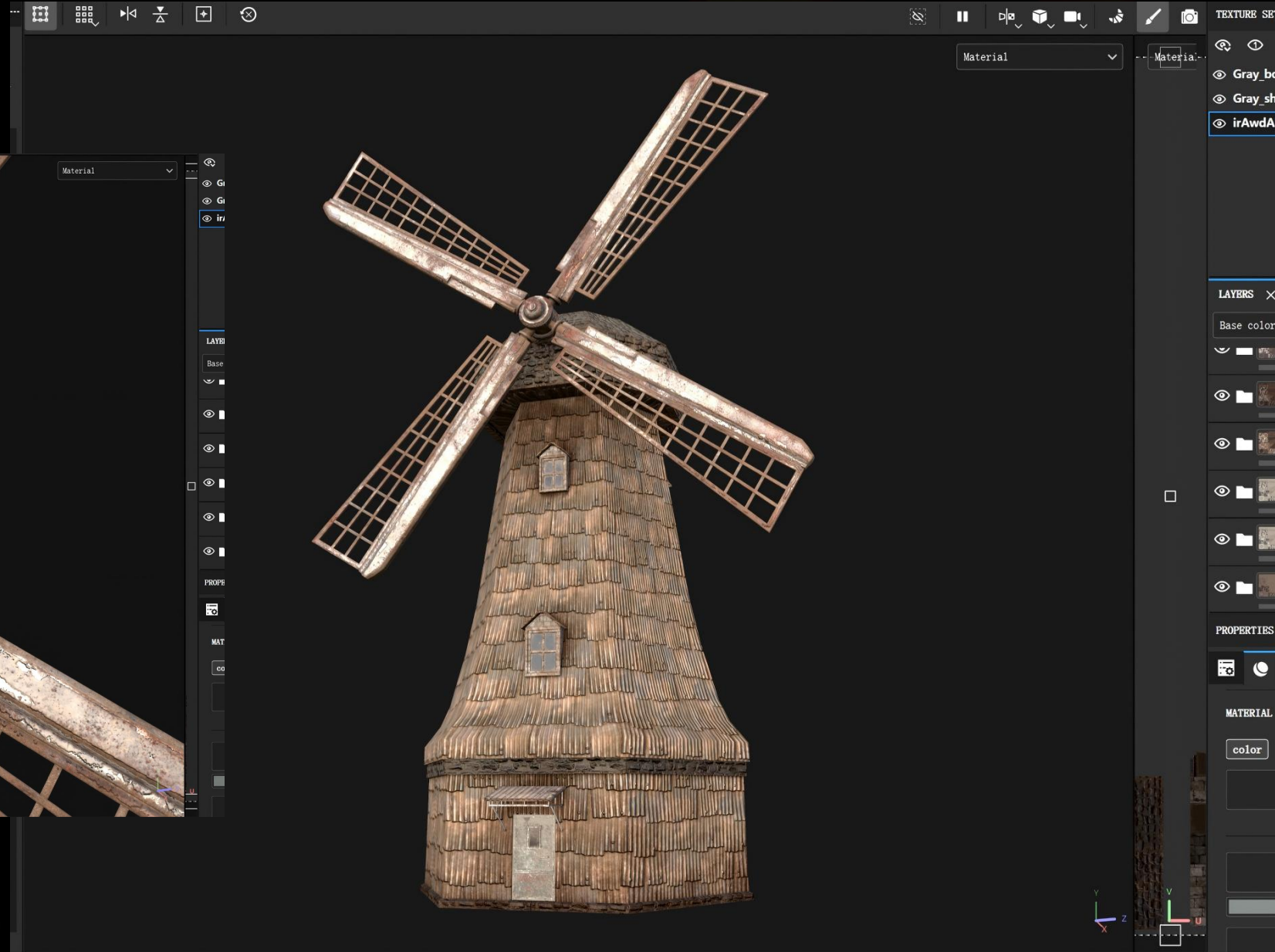
Texturing

#1 Wasteland Venom Off-Road Vehicle

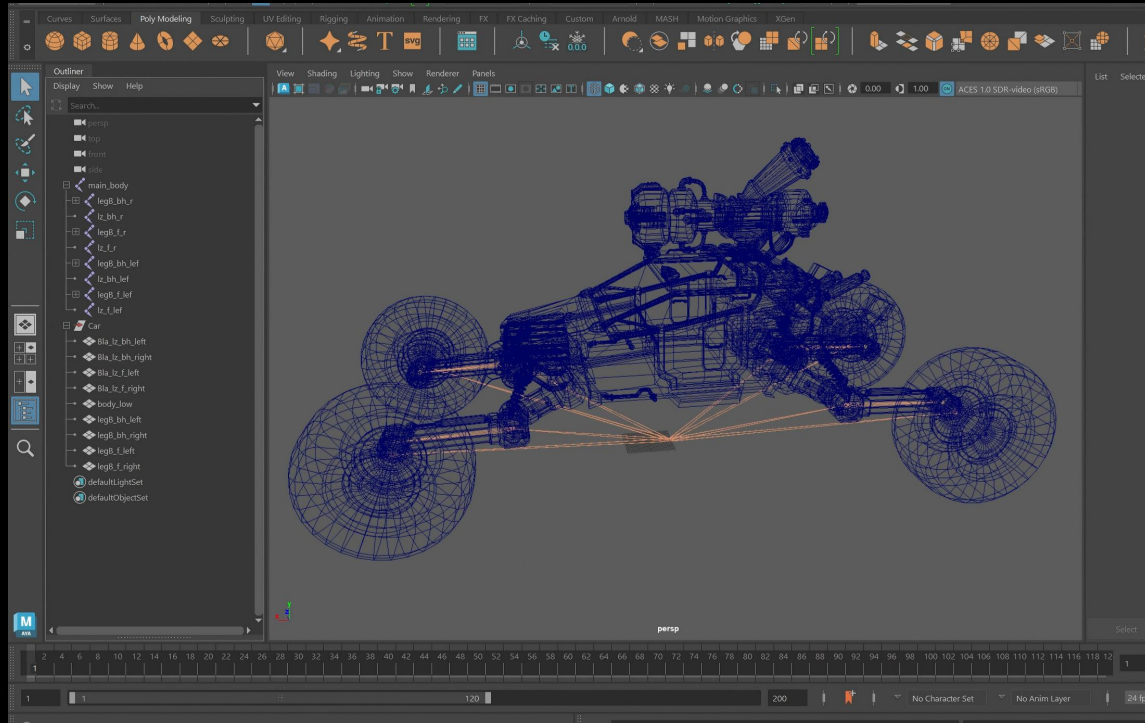




#2 Wasteland Windmill

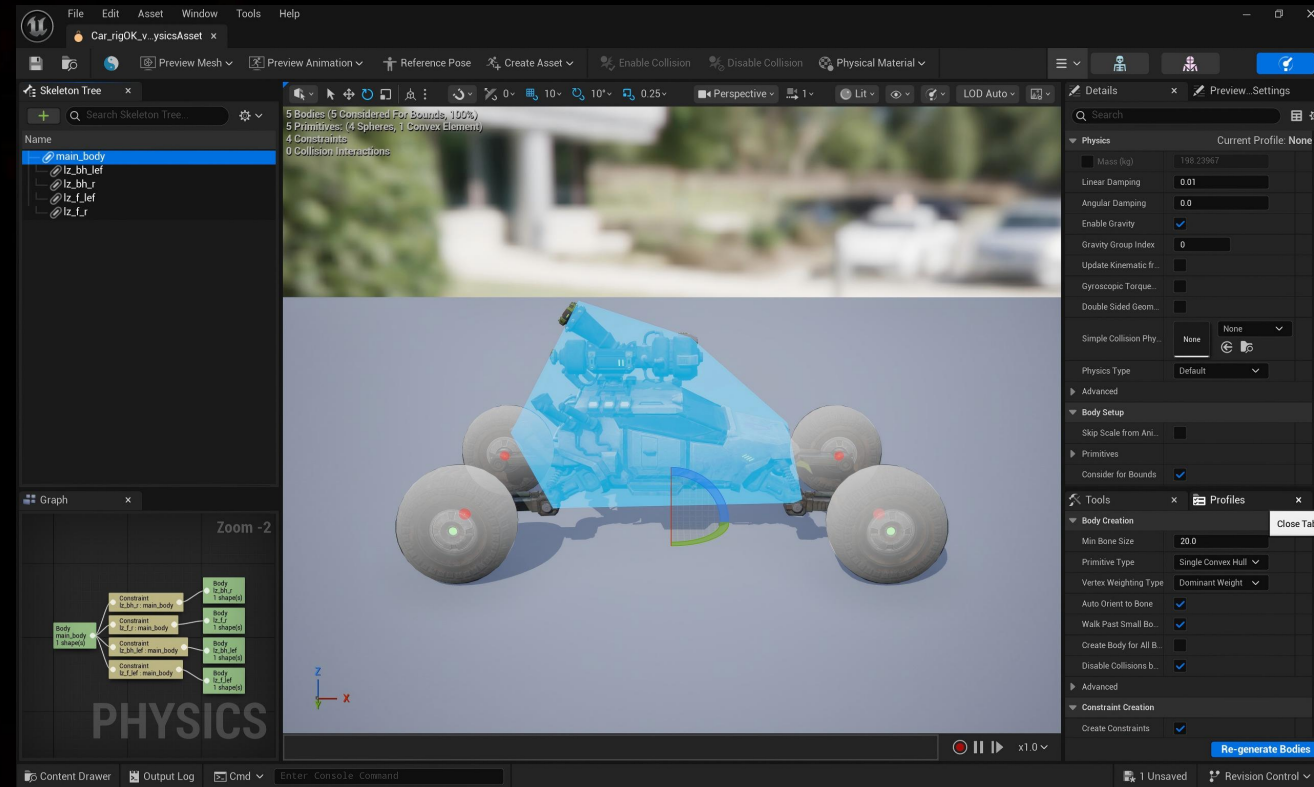


Rigging



I used Maya to rig the car model with a skeleton so that the bones can control the entire vehicle, including the wheels and the mechanical arm.

Then I set up the vehicle suspension in Unreal Engine. First, it was necessary to enable the ChaosVehiclesPlugin, and then manually assign constraints and collision bodies.



Reference image



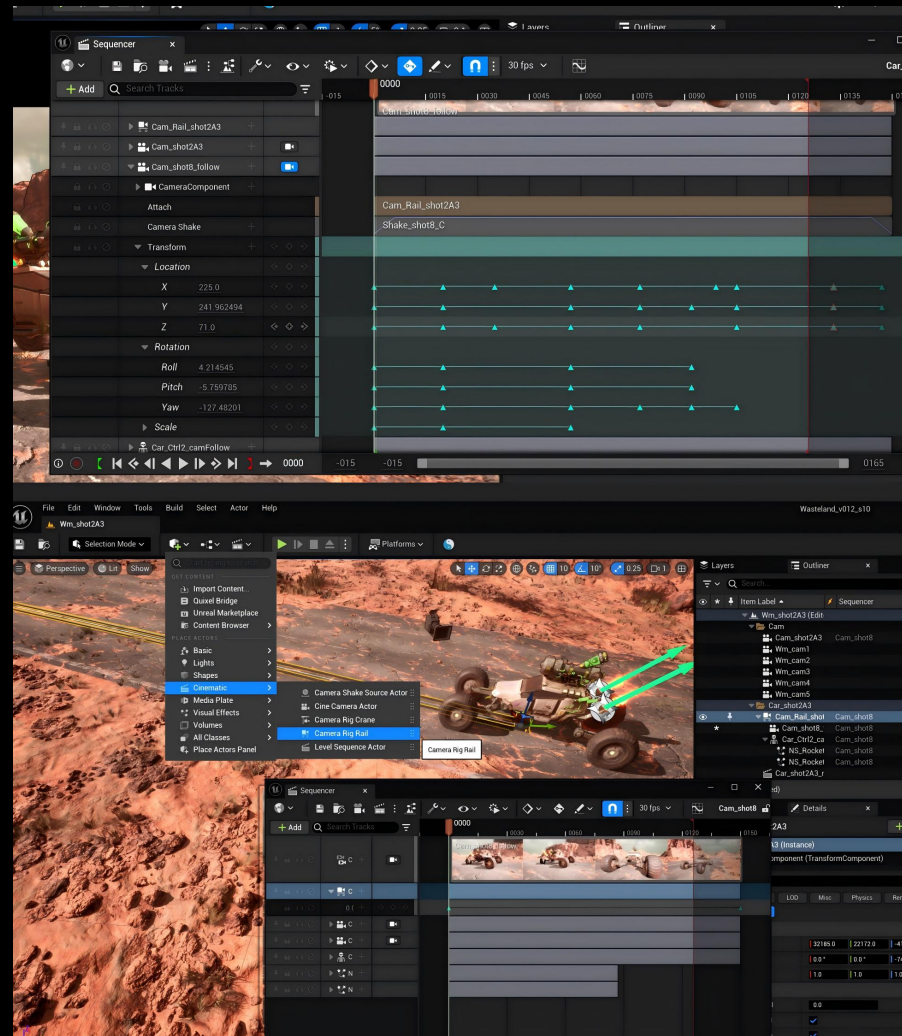
Stylization and UE5 Scene

My attempt in Unreal Engine 5

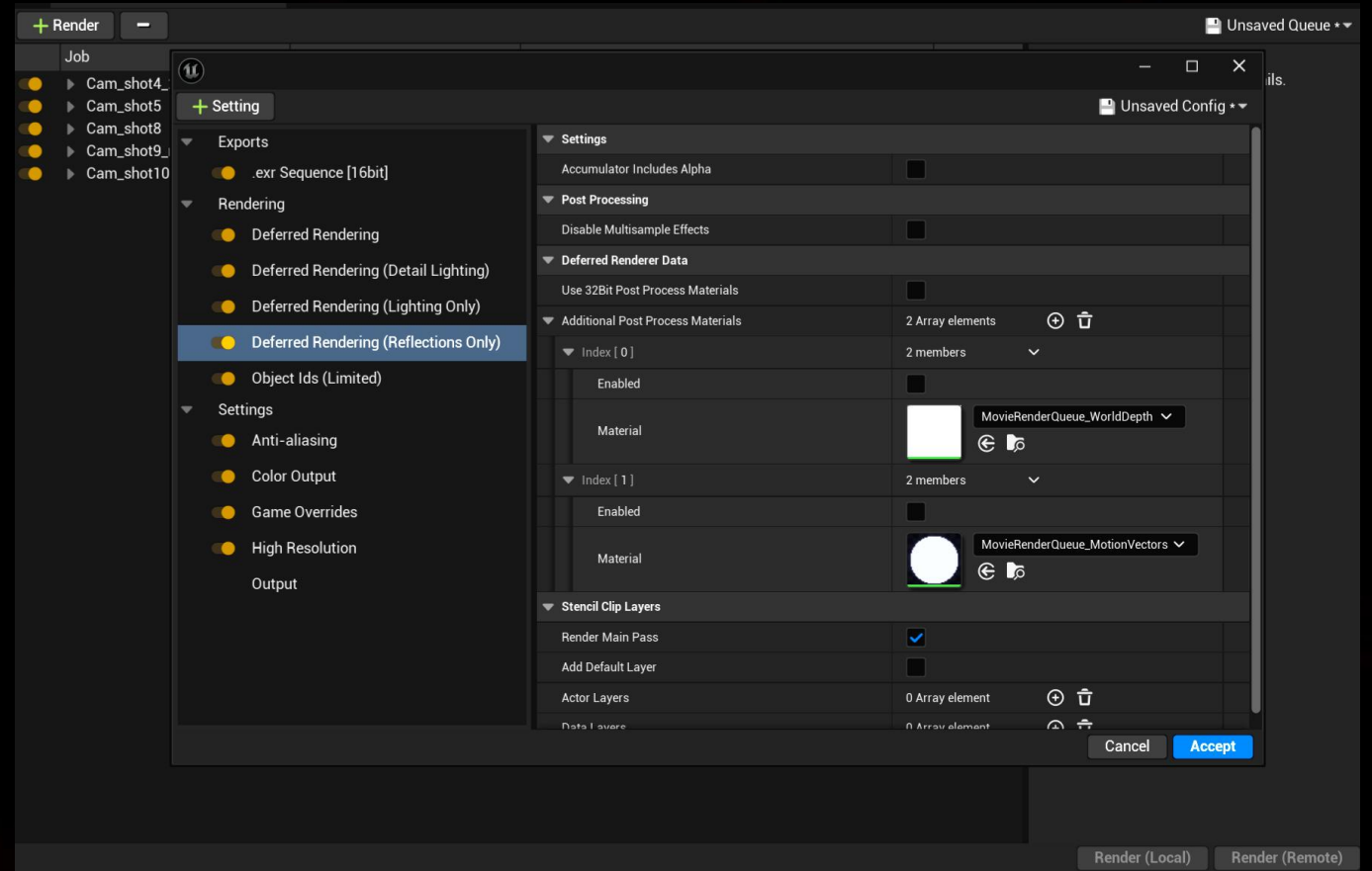


Vehicle Animation and UE5 Render Layers

Vehicle Animation



Render Layers



Nuke Compositing

This panel shows a Nuke node named 'Cryptomatte1_folder'. The 'Layer Selection' is set to 'ActorFillProxyMask' and the 'Manifest Source' is 'Metadata Auto'. The 'Matte List' contains 'Car_model'. The 'Matte Output' is set to 'rgba.alpha'. The preview window displays a grayscale image of a windmill scene with a white matte mask covering the windmill and the path leading to it.

This panel shows the same Nuke node as the previous panel. The preview window displays a multi-colored matte mask for the same windmill scene, with different colors representing different elements of the scene, such as the windmill (blue), the path (green), and the sky (dark blue).

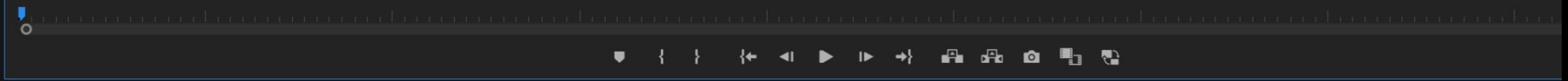
This panel shows a Nuke node named 'Read7'. The 'File' is set to '_video/shot3_lightAnomal/Cam_shot3_ligAnm.####.exr'. The 'Proxy Format' is 'root_proxy_format_1024x778'. The 'Frame Range' is '0' to '149'. The 'Input Transform' is 'Default (lin)'. The 'EXR Options' are checked for 'offset negative display window' and 'do not attach prefix'. The preview window displays a detailed lighting render of the windmill scene, showing the windmill, the path, and the surrounding landscape with various lighting effects.

This panel shows the same Nuke node as the previous panel. The preview window displays a multi-colored lighting render of the same windmill scene, with different colors representing different elements of the scene, such as the windmill (blue), the path (green), and the sky (dark blue).

Video Editing



00:00:00:00 100% 1/2 00:00:00:00



allShot

00:00:00:00

V2

V1

A1

A2

shot1_high.mov [79.85%]

shot2A3_high.

shot2_high.m

shot3_high.mov [79.7%

shot4_high.

shot5_high.mov [80%]

shot6_high.mov [79.7%

shot8_high2.mov